



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

WIDENER LIBRARY



HX T8JL +

Harvard College Library



FROM THE BRIGHT LEGACY

One half the income from this Legacy, which was received in 1880 under the will of

JONATHAN BROWN BRIGHT
of Waltham, Massachusetts, is to be expended for books for the College Library. The other half of the income is devoted to scholarships in Harvard University for the benefit of descendants of

HENRY BRIGHT, JR.,
who died at Watertown, Massachusetts, in 1686. In the absence of such descendants, other persons are eligible to the scholarships. The will requires that this announcement shall be made in every book added to the Library under its provisions.



Eli Whitney

1786. Centenary of Hamden, Connecticut. 1886.

©

HISTORY

OF THE

TOWN OF HAMDEN,

CONNECTICUT,

WITH AN ACCOUNT OF THE

CENTENNIAL CELEBRATION,

JUNE 15th, 1886.

PREPARED AND PUBLISHED BY AUTHORITY OF THE TOWN,
UNDER THE EDITORIAL SUPERVISION OF

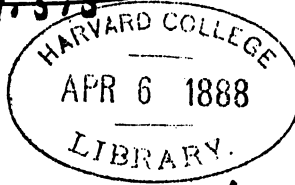
Philip
WILLIAM P. BLAKE,

CHAIRMAN OF THE CENTENNIAL EXECUTIVE COMMITTEE.

✓
5
PRINTED AND PUBLISHED BY
PRICE, LEE & CO., NEW HAVEN.
JANUARY, 1888.

US 14849.5.5

~~H344790~~
~~US 14849.5.5~~



Bright Fund

Entered, according to Act of Congress, in the year 1887,

By PRICE, LEE & CO.,

In the Office of the Librarian of Congress, at Washington.

CONTENTS.

PART I.

CELEBRATION OF THE CENTENARY.

LIST OF COMMITTEES.	vii-viii
INITIATORY PROCEEDINGS.	1-4
CENTENNIAL COMMITTEE—LIST OF INVITED GUESTS.	
HAMDEN CENTENNIAL CELEBRATION.	5-10
COMMEMORATIVE EXERCISES—PROCESSION—LOAN EXHIBITION— ORDER OF EXERCISES.	
OPENING PRAYER.	11-12
REV. AUSTIN PUTNAM.	
OPENING ADDRESS.	13-20
WILLIAM P. BLAKE—THE ACT OF INCORPORATION.	
CENTENNIAL HYMN.	20
GOVERNOR HARRISON'S ADDRESS.	21-22
THE FLAG OF OUR UNION.	23-35
BY HON. N. D. SPERRY.	
PROFESSOR SIMEON E. BALDWIN'S ADDRESS.	36-38
ADDRESSES AND REMARKS.	29-45
REV. MR. D. MACMULLEN, PASTOR OF THE METHODIST SOCIETY, HAMDEN PLAINS—REV. FATHER HUGH MALLON—HON. HENRY TUTTLE—MR. IVES, OF MT. CARMEL—COL. A. H. ROBERTSON, OF NEW HAVEN.	
THE LOAN EXHIBITION.	46-48
LIST OF OBJECTS, AND OF EXHIBITORS.	

PART II.

HISTORICAL AND DESCRIPTIVE.

TITLE, BOUNDARIES AND TOPOGRAPHY.	49-62
PURCHASE OF LAND FROM THE INDIANS—ROYAL CHARTER OF 1662—EXTENT AND BOUNDARIES OF THE TOWN—MAPS OF THE TOWN, AND ITS AREA—ORIGIN OF THE GENERAL FORM OF THE SURFACE—PICTURESQUE SCENERY—LEGENDS OF THE BLUE HILLS—SELECTIONS FROM THE POEM OF THE "SLEEPING GIANT."	
SKETCH OF THE GEOLOGY.	63-70
THE NEW RED SANDSTONE—METAMORPHOSED SANDSTONE—GLACIATION OF THE REGION—RIVER DRIFT AND TERRACE FORMATION—DEPOSITS OF SAND AND CLAY—VARIETY OF SOIL—MINERAL DEPOSITS.	
HISTORY OF MINING IN HAMDEN.	71-74
J. H. DICKERMAN—MINING LEASES—NATIVE COPPER—TALLMAN'S MINE.	
FOREST TREES.	75-82
J. H. DICKERMAN—GROWTH ON OLD FIELDS—MARKET AND VALUE OF TIMBER—ESTIMATE OF CONSUMPTION—EXHAUSTION OF THE SOIL BY FORESTS—PROTECTION FROM LIGHTNING—CULTIVATION OF FOREST TREES—LIST OF NATIVE VARIETIES OF FOREST TREES.	
AGRICULTURE.	83-90
J. H. DICKERMAN—CORN AND CORN MEAL—HORSES AND CATTLE—FERTILIZERS—VITICULTURE—TOBACCO CULTURE—PEACH CULTURE—DAIRY—CHERRY AND MULBERRY TREES.	
PUBLIC WORKS.	91-108
CHESHIRE ROAD—ROAD OR WAY TO THE PLAINS—FARMINGTON ROAD—HARTFORD AND NEW HAVEN TURNPIKE—CHESHIRE TURNPIKE COMPANY—FARMINGTON CANAL COMPANY—NEW HAVEN AND NORTHAMPTON COMPANY—NEW HAVEN AND NORTHAMPTON RAILROAD—CONSOLIDATED ROAD TO HARTFORD AND SPRINGFIELD—NEW HAVEN WATER COMPANY—WHITNEY DAM—THE COVERED BRIDGE—WINTERGREEN LAKE WATERWORKS—MT. CARMEL WATER COMPANY—EAST ROCK PARK.	
MANUFACTURING INDUSTRY.	109-169
INTRODUCTORY NOTICE—IRON WORKS AT SALTONSTALL LAKE—SILK—UTILIZATION OF MILL RIVER—THE COTTON GIN—WHITNEY ARMORY—THE MANUFACTURE OF FIRE ARMS—WHITNEY UNIFORMITY SYSTEM—WHITNEY ARMS COMPANY—BORING TOOLS, AUGERS, GIMLETS, ETC., W. A. IVES & CO.—CANDEE RUBBER CO.—MT.	

CONTENTS.

v

CARMEL AXLE WORKS; BY JAMES IVES—NEW HAVEN WEB CO.—CARRIAGE HARDWARE; WOODRUFF, MILLER & CO.—CARRIAGE SPRINGS—MT. CARMEL BOLT CO.—CARRIAGE POLE WORKS; GRANNISS & RUSSELL—PAPER BOX WORKS—MT. CARMEL SCREW WORKS; JAMES IVES & E. S. PIERCE—PRUNING SHEARS—SILK; R. S. CLARK & CO.—SMALL BELLS; R. S. CLARK & CO.—BRICK INDUSTRY—ICE—HORSE HOE AND PLANTING MACHINE, SHARES—GYPSUM MILL—SAW MILL AND FLOUR MILL; ANDREWS.

SCHOOLS AND EDUCATION. 170-174

SCHOOL DISTRICTS, TEACHERS AND ATTENDANCE—THE RECTORY SCHOOL; EVEREST.

ECCLESIASTICAL HISTORY. 175-199

PARISH OF MOUNT CARMEL—MOUNT CARMEL CHURCH AND SOCIETY; HIGGINS—HAMDEN EAST PLAIN SOCIETY; PUTNAM—GRACE CHURCH, PROTESTANT EPISCOPAL; EVEREST—HAMDEN METHODISM; MAC MULLEN—ST. MARY'S ROMAN CATHOLIC CHURCH; REV. FATHER MALLON—NEW LEBANON MISSION.

MILITARY HISTORY. 200-206

WILLIAM T. SMITH—INDIAN AND FRENCH WARS—SEVENTEENTH COMPANY MUSTER ROLL—DEFENCE OF NEW HAVEN—WAR OF 1812—WAR OF THE REBELLION.

EXTRACTS FROM THE TOWN RECORDS. 207-217

RECORD OF THE FIRST TOWN MEETING—TAXES, HIGHWAYS, ETC.—TOWN BURDENS—CONSTITUTIONAL CONVENTION—PLAINS AND EAST FARMS HIGHWAY—INOCULATION FOR SMALL-POX—STAMPING LEATHER; SECESSION; ESTRAYS—WOODBIDGE BOUNDARY; TOWN-HOUSE—WORK-HOUSE—POOR—GEESE AND GEESE-KIND; TOWN LINE—HARTFORD TURNPIKE—TOWN POOR—CONSTITUTION FOR STATE OF CONNECTICUT—PRESIDENTIAL ELECTORS—PHYSICIAN—CANAL—HORSES AND CATTLE.

THE POOR OF THE TOWN. 218-220

BY C. P. AUGUR—EARLY PROVISION FOR THE POOR—THE TOWN FARM—THE ATWATER FUND.

POPULATION. 221-223

IN 1786—CHIEF CENTERS OF POPULATION—EXTENSION OF CITY POPULATION—STATISTICS OF POPULATION.

SOCIETIES. 224-226

DAY SPRING LODGE, MASONIC; ANCIENT ORDER OF HIBERNIANS.

FAMILY HISTORY NOTICES. 227-312

ALLING—BASSETT—BENHAM—BLAKE—BRADLEY—BRISTOL—CHARTERTON—DICKERMAN—FORD—GILBERT—GOODYEAR—EATON—IVES—LEEK—MATHER—MIX—PARDEE—PIERPONT—PUTNAM—WHITNEY—WHITING.

TAXATION—RECORDS. 313-316

ELLSWORTH B. COOPER.

LIST OF FREEMEN ADMITTED.	317-323
LIST OF SELECTMEN ELECTED.	323-328
LIST OF REPRESENTATIVES AND SENATORS FROM HAMDEN.	328-331

ILLUSTRATIONS.

- ✓ STEEL ENGRAVED PORTRAIT OF ELI WHITNEY—FRONTISPIECE.
- ✓ BUILDINGS OF NEW HAVEN WEB COMPANY, TO FACE PAGE 147.

HAMDEN CENTENNIAL COMMITTEE,

Appointed by the Town October 5th, 1885.

Wm. P. Blake,	Ellsworth B. Cooper,	L. A. Dickerman,
A. J. Doolittle,	Henry Munson,	E. W. Potter,
Rev. Austin Putnam,	Henry Tuttle,	J. J. Webb.

Selectmen:

Charles P. Augur,	W. W. Woodruff,	Thomas Cannon.
-------------------	-----------------	----------------

CENTENNIAL EXECUTIVE COMMITTEE,

Appointed by the Town January 4th, 1886.

Wm. P. Blake,	Henry Munson,	Ellsworth B. Cooper,	Henry Tuttle.
---------------	---------------	----------------------	---------------

Selectmen:

Charles P. Augur,	W. W. Woodruff,	Thomas Cannon.
-------------------	-----------------	----------------

SUB COMMITTEES,

Appointed by the Executive Committee.

ON RECEPTION.

J. J. Webb,	George H. Allen,	G. S. Benham,
H. W. Munson,	O. A. Burleigh,	B. A. Mann,
	Norris B. Mix.	

ON COLLATION.

J. B. Gilbert,	William S. Mann,	Dana H. Cooper,	Edward D. Sanford.
----------------	------------------	-----------------	--------------------

ON SEATS AND TABLES.

A. J. Doolittle,	George A. Bassett,	Silas Benham,
H. W. Tuttle,	E. B. Wallace.	

ON MUSIC.

C. P. Augur,	E. B. Cooper.
--------------	---------------

ON DECORATION.

Wm. F. Smith, Arthur Woodruff, Chas. H. Chapman, Jared Benham.

ON FLOWERS.

J. H. Burton, Mrs. C. P. Augur, Mrs. W. W. Woodruff, Mrs. D. D. Ives.

ON LOAN EXHIBITION.

MANAGERS,

WILLIAM F. DOWNER.

MISS EMMA DICKERMAN.

SOLICITING COMMITTEE.

Mrs. Henry Tuttle,	Mrs. Samuel Todd,	Miss Ella Leek,
Mrs. James Ives,	Mrs. J. T. Henry,	Mrs. B. A. Mann,
Mrs. Charles Alling,	Mrs. W. E. Davis,	Mrs. E. W. Potter,
Mrs. G. S. Benham,	Mrs. J. B. Gilbert,	Mrs. Hobart Alling,
Mrs. John E. Andrews,	Mrs. G. A. Burleigh,	Mrs. W. W. Woodruff,
Mrs. N. B. Mix,	Mrs. A. O. Beach,	Mrs. J. J. Webb,
Mrs. J. A. Farnsworth,	Miss Sarah Atwater,	Mrs. H. W. Munson,
Mrs. Robert Dickerman,	Mrs. Silas Benham,	Mrs. L. J. Russell.

ON SUNDAY SCHOOL PROCESSION.

Eli G. Dickerman,

Arthur Woodruff.

CHIEF MARSHAL,

WILLIAM E. DAVIS.

AID,

Dennis S. Sanford.

PART I.

CELEBRATION OF THE CENTENARY.

INITIATORY PROCEEDINGS.



AT the annual Town Meeting of Hamden, held October 5, 1885, the approaching one hundredth anniversary of the incorporation of the town, and the importance of duly celebrating it, was discussed and a committee of nine residents of the town was appointed to act in connection with the Selectmen in drafting a plan for the appropriate celebration of the event. The following named persons constituted this committee: William P. Blake, Rev. Austin Putnam, Henry Munson, James J. Webb, Henry Tuttle, Ellsworth B. Cooper, Edwin W. Potter, Andrew J. Doolittle, Leverett A. Dickerman, with the Selectmen: Charles P. Augur, Walter W. Woodruff and Thomas Cannon.

This committee was instructed to report to an adjourned town meeting, to be held on the first Monday of January, 1886.

After several meetings and conferences with leading men of the town, this Centennial Committee agreed upon a

plan and reported it to the town meeting as instructed. The committee proposed :—

1. That the celebration should be upon the third Tuesday in June, this being the anniversary of the first town meeting under the incorporation.

2. That there should be a procession formed by the various organizations, citizens and representatives of the manufacturing establishments in the town.

3. The assembling of the inhabitants of the town, with invited guests, to listen to historical addresses and to music.

4. A collation for the guests of the town.

5. A loan exhibition of relics and objects historically interesting.

6. The preparation of a history of the town to be published in connection with a report of the celebration.

7. That an executive committee of four persons should be appointed to act with the Selectmen in carrying out the plan adopted by the town, and with power to appoint sub-committees.

8. That an appropriation of one thousand dollars, or so much of it as might be necessary, should be made to cover the expenses.

This report was unanimously accepted and adopted by the town, the appropriation was made, and the executive committee was appointed as follows: William P. Blake, Henry Munson, Henry Tuttle, Ellsworth B. Cooper, with the Selectmen: Charles P. Augur, Walter W. Woodruff and Thomas Cannon.

The Executive Committee met frequently at the office of the Town Clerk and arranged the details of the celebration. Ellsworth B. Cooper was elected secretary of the committee. Numerous sub-committees were appointed to co-operate, and they rendered essential service. A list of these committees and the members will be found at the beginning of this volume.

Invitations to attend the celebration were issued to many of the leading men of New Haven and neighboring towns.

LIST OF INVITED GUESTS.

His Excellency H. B. Harrison, Governor of Connecticut.

Hon. Charles R. Ingersoll.

County Commissioners—Hiram Jacobs, Cecil A. Burleigh, Albert B. Dunham.

State Attorney, Tilton E. Doolittle.

Sheriff, R. O. Gates.

Judge of Probate, Samuel A. York.

Hon. N. D. Sperry.

Donald G. Mitchell.

Hon. Joseph R. Hawley.

Rev. E. E. Atwater.

Eli Whitney, Sr.

Eli Whitney, Jr.

Capt. Charles H. Townshend.

Prof. Franklin B. Dexter, Professor of American History, Yale College.

Simeon E. Baldwin, President N. H. Co. Historical Society.

Thomas R. Trowbridge, Jr., Secretary N. H. Co. Historical Society.

Rev. Dr. Newman Smyth.

Editors—Register, Palladium, Courier, Union, Morning News.

Rev. L. H. Higgins, Rev. J. Brewster, Rev. Hugh Mallon, Rev. John Crowley,

Rev. H. L. Everest, Rev. Austin Putnam, Rev. D. McMullen,

Rev. John Lloyd, Rev. G. Sherwood Dickerman,

Rev. N. Porter, President Yale College.

WOODBIDGE.

Marcus E. Baldwin, R. C. Newton, S. P. Bradley,

T. R. Baldwin.

BETHANY.

Edwin N. Clark, S. R. Woodward, David Carrington, Samuel G. Davidson.

CHESHIRE.

M. C. Doolittle, Bradley Miles, George R. Ives, Alonzo E. Smith.

WALLINGFORD.

O. I. Martin, Henry L. Hall, 2d, Charles D. Doolittle, R. C. Morse.

NORTH HAVEN.

L. P. Tuttle, R. L. Linsley, Willis Hemingway, Fred. E. Jacobs.

NEW HAVEN.

Mayor George F. Holcomb, Clerk Philip Hugo, James Reynolds, Ernest

Klenke, Julius Tyler, Isaac E. Brown, John L. Treat,

Louis Feldman, W. S. Beecher.

GRANBY.

C. P. Loomis, Wilbur Ruick, Marcus B. Alling, Charles Coffey.

SOUTHINGTON.

C. D. Pierson, Charles Hitchcock, Solomon Finch, Michael Egan.

BOZRAH.

James Bishop, Charles A. Johnson, John F. Leffingwell, Gardner Avery.

FRANKLIN.

Samuel G. Hartshorn, Joseph P. Hyde, James L. Austin, Clifton Peck.

LISBON.

Henry Lyon, Cornelius Murphy, Russell W. Fitch, J. K. Adams.

MONTVILLE.

Henry A. Baker, Martin V. B. Brainard, C. Tyler Landphere, Arthur Botheln.

SOUTHURBY.

Jacob J. Hinman, Theodore F. Wheeler, Jacob Wentsch, David M. Mitchell, Curtis H. Smith.

OLD SAYBROOK.

Ozias Kirtland.

PRESTON.

Thomas S. Phillips, Frank W. Tracy, William Bennett, Henry Hopkins.

BROOKLYN.

Clarence E. Potter, John S. Searles, William H. Outler, Elias H. Maine.

HAMPTON.

W. H. Burnham, George M. Holt, Addison J. Greenslit, Horatio Martin.

WAHURN.

John B. Derrickson, Noble B. Strong, Fred. P. Johnson, Wm. Forrester, Jr.

ELLINGTON.

Oliver M. Hyde, John Thomson, Elbert F. Hyde, John Beasley.

FORMER RESIDENTS.

R. R. Palmiter, Jonathan P. Spencer, George A. Stevens, R. R. Wolcott, C. H. Rose, H. D. Smith, William Wilcox, Dr. Williams and family, M. Gavagan, W. Sweeney, Patrick Clynne.

FORMER TOWN OFFICIALS.

L. A. Dickerman, H. W. Munson, Edward Davis, E. W. Potter, Bela A. Mann, N. B. Mix, Andrew McKeon, A. J. Doolittle, Harry Prescott, Henry Tuttle, Merrit Ford, Edwin B. Payne, Jesse Cooper, Philo Bradley, Lewis Warner, R. H. Cooper, J. J. Webb, J. H. Dickerman, Jared Dickerman, Griswold I. Gilbert, Eli B. Smith, Russel S. Jacobs, John G. Smith, Lucius Ives, Elihu Dickerman.

OTHER FORMER AND PRESENT RESIDENTS.

Mr. and Mrs. Orrin Tuttle, Mrs. Sarah Alling, Mrs. Laura Gilbert, Miss J. A. Culver, Miss Hattie Hoadley, Mr. James Warner and family, Mr. George S. Thorpe, Mr. Robert H. Clarke, Mrs. Jane Bradley, Mr. and Mrs. Elias Ford, Hobart Kimberly, Mr. and Mrs. E. Ives Bradley, Mrs. Saritta Ives, Mrs. Pamela Warner, Mrs. Emily Alling, Mrs. Nancy Gorham, Mr. and Mrs. H. Roberts, Mr. Samuel Davis.

SOCIETIES, ETC.

Day Spring Lodge No. 30, F. and A. M.; Eastern Star Division S. of T., No. 30; Ancient Order of Hibernians of Hamden.

HAMDEN CENTENNIAL CELEBRATION.

COMMEMORATIVE EXERCISES, JUNE 15, 1886.

THE large open lot just north of the Episcopal Church at Centerville, was selected by the committee as the best site for the celebration. The use of the adjoining lot on the corner was secured for the town by the liberality of Mr. William J. Ives.

Three large tents were provided; one for the audience with seats for 1,500 persons, and two provided with tables and seats for the accommodation of the people and guests at luncheon. A portion of the grounds was reserved for vehicles. The entrance from the main street was marked by a large triumphal arch decorated with flags.

The procession formed shortly after ten o'clock under the direction of the chief marshal, Mr. William E. Davis. It was headed by the Centerville Brass Band, which was in attendance, and rendered the instrumental music for the day. A line of carriages followed, bearing the Governor of the State and his Secretary, members of the reception and other committees, and prominent residents of the town. The Ancient Order of Hibernians from Mount Carmel joined in the procession, and delegations from some of the larger manufacturing establishments with their freight wagons. These wagons were gaily decorated and bore open cases of goods as usually packed for shipping, thus making an open air moving display of the chief manufactures of Hamden. Amongst these exhibitions the open cases of firearms from the Whitney Arms Company, surmounted by the original model of Whitney's cotton gin, attracted great attention. The display made by W. A.

Ives & Co. of augers, bits, etc., and by R. B. Bradley & Co. of agricultural implements, and machines were especially interesting. The ice wagons and milk wagons were out in force and were brilliantly decorated.

The exercises in the tent commenced shortly after the arrival of the procession and proceeded according to the programme annexed. After singing the doxology, at the request of the chairman of the day, the Rev. Austin Putnam, of the Hamden East Plain Society, made the opening prayer, the audience joining in repeating the Lord's prayer at the end.

The vocal music for the occasion was furnished by a chorus of about one hundred and fifty trained voices, accompanied by an orchestra of four pieces and directed by Mr. Elliot E. Ives, of Mt. Carmel, with Mr. C. P. Augur, of Whitneyville, as organist, and was a very interesting part of the celebration.

The loan exhibition was kept open during the day and was crowded with objects of interest and with visitors.

At luncheon about two hundred guests were seated at tables profusely decorated with flowers, and were gracefully served by about twenty young ladies, daughters of residents of the town.

After luncheon about 800 members of the several Sunday Schools of the town formed in procession, and, headed by the marshals, marched around the grounds singing Sunday School songs, after which they were seated in the tent and joined in the exercises of the afternoon.

Further details are given in the annexed extracts from the account of the celebration given in the *New Haven Register*.

"There was a great celebration out in the good old town of Hamden to-day. Its residents all the way from Whitneyville to Cheshire, and from Hamden Plains to Mount Carmel, were out enrobed in their gayest garbs and loaded with patriotism. It was the occasion of the celebration of the centennial of the establishment of town government in

Hamden, and great preparations had been made to adequately recognize the birthday of home rule in that vicinity. Hamden folks never do things by halves. Centennial day was made a holiday throughout the district, and about all of its inhabitants assembled on the big lot near the Centerville Hotel and celebrated the great occasion. A number of tents erected on the grounds made the town look as though it was visited by a circus. All the stores were closed up and many of the houses were prettily decorated with flags and bunting.

It was not much of a day for centennials. The weather did not seem to smile in unison with Hamden's joy. A drizzling rain at the outset did not dampen enthusiasm, but it took the crimps out of the young ladies' hair and discouraged the merrymakers.

The procession started off just before 11 o'clock. About one hundred and fifty men and three hundred American flags of all sizes, shape and make participated in it. The Centerville Band, fifteen pieces, headed the line, blowing a gay triumphal march. Then came the Ancient Order of Hibernians, fifty strong, with Patrick Maher at their head and wearing their gay regalia. Then came Governor Harrison, Private Secretary Osborne and Hon. N. D. Sperry, in an open barouche. The Selectmen of the town of New Haven were the next in line. They rode in a three-seated wagon and were all there. A score of milk and ice wagons all bedecked in flags and bunting, and laden with prettily-dressed young ladies with faces as pretty as their dresses, and smiles as plentiful as the flags on the wagons. The line moved gaily through some of the roadways, and the whole town of Hamden turned out to applaud it. It wended its way around in the mud for a while, and then wound up under the big tent, where the exercises of the day were at once commenced.

There were a number of notables on the platform. Besides the Governor and those already mentioned were Professor W. P. Blake, who was the chairman of the day, Eli

Whitney, Sr., and Eli Whitney, Jr., Rev. Hugh Mallon, pastor of the Catholic Church in Wallingford, Hon. A. Heaton Robertson, Simeon E. Baldwin, Attorney J. J. Webb, the members of the committee on the celebration, and several others. Down in front of the platform were ranged on tiers of seats the young and pretty maidens of Hamden and adjacent towns, who were on hand to do the singing, well ranged. They all wore their Sunday garments and they all had cheeks as red as roses and eyes as bright as the sunlight that was expected to paint the town in gold this morning and didn't. The singing of the Doxology "Praise God from whom all blessings flow," and then Rev. Austin Putnam, pastor of the Whitneyville Congregational Church for forty-five years, made the opening prayer, appropriately and briefly. The address of welcome by Prof. Blake was terse and interesting. The Centennial hymn, composed by Deacon J. M. Payne, was then voiced by the pretty girls.

Governor Harrison was then introduced. He was received with much applause, and said that he was deeply and truly thankful that he was able to be present at the celebration. When he was invited, however, the committee did not stipulate that he was to make a formal speech, and he didn't propose to do it. He, however, made a very eloquent address, in which he dwelt on the great advantage of town government and said that any town in Connecticut was a little republic in itself with prerogatives that nothing could take from it. He complimented the Hamden people on their beautiful town and referred to its splendid record.

When the Governor had finished, Prof. Blake said that by a curious coincidence yesterday was the anniversary of the adoption of the American flag, and he would introduce Hon. N. D. Sperry to give a brief history of it. The Hamden people were made all the happier when Mr. Sperry appeared on the platform. He made a long speech. He liberally interspersed history with poetry, and his whole

address was filled with a patriotic fire that seemed to spread among the audience, and when Mr. Sperry got through they all felt prouder of their country than ever. Among other things, Mr. Sperry said that he could appreciate the truth of what Professor Blake had said about the educational facilities of Hamden. He knew it was true because he taught school in the town himself when he was seventeen years of age. Professor Simeon E. Baldwin made a very happy address. He said that the Hamden people were fortunate in having so many men from New Haven on the platform.

ORDER OF EXERCISES.

MORNING.

The procession formed at ten o'clock, and proceeded to the large tent on the Goodyear lot.

DOXOLOGY.

"Praise God from whom all blessings flow."

PRAYER.

Rev. Austin Putnam.

ADDRESS OF WELCOME.

William P. Blake.

CENTENNIAL HYMN.

Composed for the occasion by J. M. Payne.

ADDRESS.

Governor Harrison.

ADDRESS ON THE HISTORY OF THE AMERICAN FLAG.

Hon. N. D. Sperry.

MUSIO.

"Star Spangled Banner."

ADDRESS.

Prof. Simeon E. Baldwin.

MUSIC.

"Let the Hills and Valles resound."

INTERMISSION FOR LUNCHEON.

AFTERNOON.

Procession of Sunday School Scholars and Teachers to the tent at 2:30.

MUSIC.

"Hail Columbia."

ADDRESSES.

Rev. D. McMullen.

Rev. L. H. Higgins.

Rev. Father Hugh Mallon.

MUSIC.

"To the work ! To the work !"

ADDRESSES.

Henry Tuttle.

James J. Webb.

MUSIC.

"On Jordan's rugged banks I stand."

REMARKS.

Lucius Ives.

Julius Ives.

Ellhu Dickerman.

Hon. A. Heaton Robertson.

MUSIC.

"Auld Lang Syne."

"Yankee Doodle."

FINALE.

"My country 'tis of thee."

OPENING PRAYER.

BY REV. AUSTIN PUTNAM.



ALMIGHTY GOD, our God and the God of our Fathers, we come before Thee in thankful and joyful acknowledgment of Thy great goodness to us and to those who have gone before us in this place; to all who have lived in this town from the beginning of its history until now. We give Thee most humble and hearty thanks for the good laws which Thou hast given us, and for this pleasant spot where our lot is cast. We thank Thee that the lines are fallen to us in such pleasant places, and that we have so good a heritage. We thank Thee that in Thy good providence we see this day, and we humbly and earnestly implore Thy gracious presence to be with us, and Thy blessing to be upon us, on this interesting and joyful occasion. Be with us in all the exercises and services before us. May all that we shall say and all that we shall do here at this time and on this occasion be agreeable to Thy holy will, for the glory of Thy name, and for our own temporal, spiritual and everlasting good. We beseech Thee to bless all who are or shall be here this day; also all others who are or have been residents of this town and who are still living on the earth. With Thy gracious help may we all follow Him who is the way, the truth, and the life; so may we fulfill our mission, finish the work which Thou hast given us to do in the world, and finally, by Thy mercy, attain everlasting life through Jesus Christ our Lord. We most heartily beseech Thee with thy favor to behold and bless thy servant the Governor of Connecticut, and all others in authority in this State, and all the people of this Commonwealth; also thy servant, the President of the United States, and all others in authority in

this land, and all classes and conditions of men in our beloved country. And we humbly ask for those who shall come after us in this town the same blessings that we have asked for ourselves. In their possession, and under their care and culture, may this bright spot grow brighter and brighter till time shall be no more. We ask and offer all in the name and for the sake of Him who loved us and gave himself for us, and who has taught us to pray, saying :

Our Father who art in Heaven, hallowed be Thy name, Thy kingdom come, Thy will be done on earth as it is in Heaven ; give us this day our daily bread, and forgive us our trespasses as we forgive those who trespass against us, and lead us not into temptation, but deliver us from evil, for thine is the kingdom, and the power and the glory, forever and ever—Amen.

OPENING ADDRESS.

BY WILLIAM P. BLAKE.

FELLOW TOWNSPEOPLE, FRIENDS AND NEIGHBORS:
We have assembled to-day to perform a pleasing duty to the past; to signalize the completion of one hundred years of town government and development; to take note of what has been accomplished by those who have gone before us, and to draw from a century of experience, wisdom and inspiration for the future. Nearly two centuries and a half have passed since the settlement of this region began. The history of New Haven Colony for nearly one hundred and fifty years after the purchase of Quinnipiac from the Indians is in part our history. New Haven Colony then included a large area of country, afterwards divided up into separate towns. At the end of the long struggle for the independence of the country, the segregation and organization of towns from New Haven proceeded with rapidity. In the month of December, 1781, at a town meeting of New Haven, a committee was appointed to report a plan for the division of the town into several distinct townships; Woodbridge, East Haven and North Haven were organized in succession. The charter of the City of New Haven was granted in 1784, and our Town of Hamden was set off and incorporated in 1786.

I will now read to you from the first page of our first volume of Records the act of Incorporation.

THE ACT OF INCORPORATION OF THE TOWN OF HAMDEN.

At a General Assembly of the State of Connecticut, holden at Hartford on the second Thursday of May, A. D. 1786:—Upon the Memorial of the inhabitants of the Parish

of Mount Carmel, in the Town of New Haven, and the inhabitants of said New Haven living within the limits of the 17th Military Company in the Second Regiment of Militia in this State, praying that they may be constituted a distinct and separate town by themselves as per Memorial.

Resolved by this Assembly: That the said inhabitants living within the limits aforesaid be, and they are hereby constituted a town by the name of the town of Hamden, and the bounds of said town of Hamden shall be the same as the bounds of the said Parish of Mount Carmel and the bounds of said Military Company, the bounds of which Military Company are as follows :

Beginning at the foot of the long bridge, so called, from thence a straight line to a dwelling house owned by Mr. Hezekiah Sabin, now in possession of George Peckham, thence on the north side of said house a straight line to the south-east corner of the farm lately owned by Capt. John Hubbard, deceased, thence in the line of said farm to the top of the West Rock, thence on said Rock northerly to the South-east corner of Woodbridge, thence in the line of said Woodbridge to the South-west corner of Mount Carmel Society, thence in the South line of said Society to North Haven line, thence upon said line to the East River, thence along the middle of said River to the first mentioned corner.

And said town of Hamden shall be entitled [to] and have and enjoy all the rights, privileges and immunities that the other towns in this State have and enjoy. And shall have liberty to elect and appoint all officers necessary and proper for a town ; to lay taxes and collect them as towns in this State are allowed to do, and transact all matters necessary and proper for a town ; and the said town of Hamden shall be entitled to receive of the town of New Haven their part and proportion of all the town stock of said New Haven, and said town of Hamden shall pay their part and proportion of all the debts of said town of New Haven, already incurred, in proportion to their List in the List of the town of New Haven, and shall take upon them the charge and support of their part of the town poor of said town of New Haven in proportion as aforesaid, and the taxes of said town of New Haven already laid shall and may be collected for the payment of the debts and expenses of said

town of New Haven already incurred, and the same being paid and discharged said town of Hamden shall be entitled to their part and proportion of the overplus (if any be), to be ascertained as aforesaid.

And the said town of Hamden shall bear their part and proportion of supporting Bridges and Highways within the bounds of the towns of New Haven and Hamden in such part and proportion as shall be judged just and reasonable by General Andrew Ward, Colonel Edward Russell and Gideon Buckingham, Esq., who are appointed a committee for that purpose, all the circumstances of said town being duly considered; and said committee shall also apart and set off to said town of Hamden their part and proportion of the poor of said town of New Haven, and town stock and debts in proportion to their List as aforesaid.

And said town of Hamden shall hold their first meeting at the meeting house in said Hamden on the third Tuesday of June next, at one o'clock in the afternoon, when they may choose such town officers as by law are required, who shall remain in office until another meeting shall be held in and for said town in the month of December next, and said meeting shall have power and authority to transact all matters necessary for a town, and to adjourn to a future period if necessary, said inhabitants, legal voters, being warned five days before said meeting by a written notification thereof being signed and set up by Simeon Bristol, Esq., on the Sign Post and the house of Hiel Peck, within said town of Hamden, and the said Simeon Bristol shall preside at said meeting as Moderator.

Provided, nothing in this act shall be construed to hinder the inhabitants of the said town of Hamden from catching Fish, Oysters, Clams and Shells within the bounds of said New Haven under the same restrictions and regulations that the inhabitants of said New Haven shall be, or that shall hinder the inhabitants of said New Haven from getting stone from the East and West Rocks as usual. Also, provided, that the said Town of Hamden be restricted to the choice of one Representative to represent them in the General Assembly of this State.

A true copy of record, examined by George Wyllys, Secretary.

The above and foregoing is a true copy of the original.

Attest:

SIMEON BRISTOL, *Clerk.*

At the first meeting of the inhabitants of the town, on the third Monday of June, 1786, in accordance with the requirement of the Act, it was voted that Simeon Bristol, Esq., be town clerk for the remainder of the year, and that Messrs. John Hubbard, Asa Goodyear, Samuel Dickerman, Moses Gilbert, Simeon Bristol, Esq., be the selectmen. There is no complete list of the names of the residents of the town at that time, but in the lists of persons chosen as selectmen, as surveyors of highways, and other officers of the new town, we find many family names familiar to us as the family names of prominent residents of the town to-day, most of these residents occupying the ancestral homes and tilling the same fields redeemed by their forefathers from the wilderness and the savage two centuries or more ago. These names are English names, identified with some of the great events of English history, and especially with the great struggle for the rights of the people in opposition to the encroachments of the crown ; such names as Alling, Atwater, Bassett, Bristol, Bradley, Cooper, Ford, Goodyear, Gilbert, Hitchcock, Ives, Mansfield, Mix, Munson, Todd and Tuttle. We have no doubt that our town was named in honor of John Hampden, the English patriot and lover of liberty. By whom the name was proposed we have yet to learn. Nearly a century and a half had then passed since Hampden fell on the field, but his name was in close and dear remembrance by the people. Prevented, together with Cromwell and others, from coming to this country, he remained to fight for freedom. Hampden's efforts and sacrifices were more vividly realized here than ever before when our forefathers had just passed through their great struggle for independence, and it is not strange that his name should have been chosen for the new town, then occupied chiefly by descendants of patriots of his time.

The name of Hamden, which had already been given to one of the first of our naval vessels early in 1776, is an inspiring name which should continually incite us to emu-

late the lofty virtues of the leader of the Long Parliament. Few names have been so honored in history. Macaulay writes that Hampden "is an almost solitary instance of a great man who neither sought nor shunned greatness, who found glory only because glory lay in the plain path of duty." Baxter, in his *Saints' Rest*, printed before the Restoration, declared that one of the pleasures which he hoped to enjoy in Heaven was the society of Hampden. Hume says: "John Hampden acquired by his spirit and courage universal popularity throughout the nation, and has merited great renown with posterity for the bold stand which he made in defence of the laws and liberties of his country."

Our peculiar orthography of the name requires a passing notice. It has been generally written here without the silent p, while Hampden is the prevailing English orthography. Yet we find that Hume, in his history, writes the name Hambden. President Stiles, of Yale College, so late as the year 1791, referring in his diary to this town, writes the name Hampden.

But it is not my purpose to weary you with historical details. Provision has been made, as you know, for the preparation of a history of the town in recognition of its centenary, and as the enduring, substantial part of this celebration. The Committee appointed by the town to devise a plan for the appropriate celebration of the incorporation of Hamden, as a town, was highly gratified by the reception and adoption of the report recommending that the celebration should be essentially historic in its nature, and that a volume should be prepared and published as a monument of the century which has passed away. Our meeting to-day may, therefore, be regarded as a prelude to a more enduring and lasting tribute to the events of the century. The occasion invites and permits of some self commendation and congratulations. We have a right to be proud of our town and of the achievements of its people during the century, and it is our pleasant duty to refer to them.

We have great cause for gratitude that our "lines have fallen in such a pleasant" and a "large place." There is not another town in the United States comparable with Hamden in the beauty and centrality of its location. We live in a lovely valley, from which the ancient Connecticut has been turned aside; a valley lying part way between New York and Boston, two of the chief centers of thought in America, flanked on either side by ranges of forest-covered hills terminating in the picturesque bluffs of East Rock and West Rock, opening to the sea on the south, with the Blue Hills of Mt. Carmel on the north, and a city of seventy thousand inhabitants at its feet, and the great city of New York but two and a half hours' distant. Telegraphic wires, the nerves of communities, hang thickly along our highways, and indicate the mental energy by which we are surrounded.

We have enjoyed great educational advantages and influences. The bell of one of the oldest leading universities of the country rings within hearing of our homes. From our lovely hills we look with pride and pleasure upon the spires of New Haven churches, and the domes of its temples of art and science. We can also see the blue waters of Long Island Sound dotted with white sails, and destined to become the great marine avenue between the old world and the new. As an industrial and manufacturing town, Hamden must ever occupy the foremost place in the history of the development of the industrial arts in America and in the world. It was within our limits, at the close of the last century, that Eli Whitney, resting from his labors in perfecting the cotton gin (the model of which is now in our Loan Exhibition), established the manufacture of fire arms by new and before unheard of machines and methods, which have revolutionized manufacturing industry the world over, and which hastened the era of accurate, rapid and cheap production of manufactured articles. The "Uniformity System" in manufacturing was inaugurated here in Hamden, and has spread from hence through all the

nations enlightened by science. Hamden may also claim to be the birth-place of many important manufactures, notably that of small hardware, of carriage springs and fittings, and of harness trimmings.

Manufacturing enterprises were developed in the northern portion half a century ago by Elam Ives, who served in the war of independence, and in 1812 when communication with Boston by water was cut off by the blockade, established a freight line of ox teams and wagons between New York and Boston. This leads us to advert to the great contrast presented between the means of communication of a century ago, and those which we now enjoy. The century has witnessed in our town the transition from the saddle to the stage coach, from the stage coach to the canal boat, and from the canal boat to the railway.

We may also show a laudable pride in the record of our people in all their social and political relations. The people of Hamden have ever been true to the great principles of liberty for which our fathers struggled, and they have not abused the inheritance they have enjoyed. Hamden has always responded promptly and freely to the calls to arms for the defence of the country. Not only in the war of the Revolution, but in 1812, in the Mexican war and in the war of the Rebellion, the town sent forth its full quota of intelligent freemen for the support of the flag. The spirit of peaceful industry, rather than the spirit of war is, however, characteristic of the people of Hamden. It is a town of industrious and thrifty people, with pleasant and well ordered homes, and law respecting families. Our hills and valleys are dotted over with comfortable and elegant habitations and the spires of our churches, pointing heavenward, show that we have kept the faith of our fathers, and that the people are not unmindful of the fact that we have "no abiding city here."

While thus looking back upon the record of the town let us be duly thankful for the blessings and privileges we enjoy, and show that we are duly sensible of the privations

and efforts of the generations that have preceded us. We are also proud of the record of our neighbors of New Haven, and we congratulate them upon their achievements and prosperity. We are thankful that we have some of them, and other valued neighbors and friends, here with us to-day on this happy occasion, and to them all, in the name of the town, a most cordial and hearty welcome is extended.

CENTENNIAL HYMN.

Written for the occasion by Deacon J. M. PAYNE, of Hamden.

TUNE—*America.*

Let every heart rejoice
With instrument and voice,
On this glad day.
Tribute of praise we bring
To God our sovereign king;
With thy protecting wing
Defend we pray.

One hundred years have fled,
And numbered with the dead
The true and brave.
Yet, for our common weal,
We'll emulate their zeal,
And to our God appeal,
Our country save.

May Hamden ever be
Worthy of Liberty
Our fathers won;
Let coming history tell
Our parts we acted well;
And may our sons excel
What we have done.

GOVERNOR HARRISON'S ADDRESS.

ACCEPT my hearty thanks, fellow citizens of Hamden, that your kindness has given me an opportunity of being present with you on this interesting occasion.

My thanks are particularly due to your committee for the special kindness in relieving me from any obligation to give a formal discourse. At their suggestion, however, I will say a word or two, although I am here as an observer and a listener; an interested observer and an enthusiastic listener, rather than as a speaker.

You celebrate to-day the one hundredth anniversary of the organization of your town. I wonder how many persons there are present here who appreciate the full significance of that fact—the organization of a Connecticut town. Are all of you aware, do all of you fully understand what a peculiar organization is the organization of a town in the State of Connecticut? Do you all fully understand that by the act of the General Assembly, which made you a town, you were made in your municipal capacity a little indestructible republic, having great powers of local government which can never be taken away from you; and that you are thus entered into the family of towns, that family of little republics, now 167 in number, who by their indestructible union constitute the State of Connecticut?

The principle of town government is widely extended in this country, especially in New England, especially in Vermont, the child of Connecticut, especially in Massachusetts and in some other parts of the country, but after some little reading of the history, some little examination, I believe I am safe in saying that there is no state and no country in this world where the principle of Home Rule, or the principle of the government by the people, is so radically carried

out and so thoroughly protected by the Constitutional defences as it is in this town of Hamden, and in every other town in the State of Connecticut.

You do not hold your rights, your most important ones, at the pleasure of the General Assembly, at the pleasure of the State Government, or of any other power on earth.

Your right to representation in the General Assembly cannot be taken away from you by any power. Your right to your town meeting cannot be taken from you. Your right to elect your own selectmen, your town clerk, your grand jurors, your officers, your constable, your justice of the peace; these rights are yours so long as the Constitution of the State remains as it is. The existence of this town cannot be destroyed. The General Assembly cannot abolish the town of Hamden, or annex it to any other town.

I will not weary you any more with this line of thought, but it is a line of thought that will be well worthy of your future consideration when it occurs to you to take a little time to find out what sort of a thing a Connecticut town is.

The fact that you assemble here in such numbers, notwithstanding the early promise of the day, is, I think, a fact of great significance. It shows that you are not ashamed of this town of Hamden. It shows that you feel that you have good reason to be proud of it, and that you are in fact proud of it, and that is a good and useful feeling for the people to have in a town.

Self-respect is essential to a man; it is for him a great safeguard to prevent him from doing anything that would be unworthy of a man of honor and integrity. And so town pride, an affectionate respect for the history of your town, is, and will be as long as you retain it, a safeguard to prevent you doing anything or consenting to anything unworthy of a little republic, such as this town of yours is and ought to be, and you should always be jealous of its fair fame and honor.

This celebration is a good thing, not merely because it shows that you have the right feeling of town pride, but it

will be a good thing in increasing, strengthening, intensifying that town pride ; and I believe, without the shadow of a doubt, that every good citizen here will be, at sunset, a better citizen of the town of Hamden than he was at sunrise this morning, and that he will remain so.

Now, I have only to add the expression of my hope that everything will go off pleasantly, and my congratulations for the late but evidently opening promise of a beautiful day for your celebration.

THE FLAG OF OUR UNION.

HON. N. D. SPERRY.



R. PRESIDENT, LADIES AND GENTLEMEN : I notice in the historical address just read that among the early settlers of this town was Captain John Gilbert. I want to say a single word about him. When New Haven was invaded by the British during our Revolutionary war, Capt. John Gilbert commanded a body of men living within the limits of this town. Hearing of the invasion, Capt. Gilbert marched his men to New Haven to assist in repelling the invaders. He and his men did valiant service, and their heroic acts and deeds are treasured with gratitude by the people of New Haven to-day.

At last both he and his command were captured by the enemy. Capt. Gilbert asked that they be treated as prisoners of war ; but the British officer refused their request, and would give them no quarter. Knowing that they were to be shot, Capt. Gilbert ordered his men to fire, and the British officer fell dead as the penalty for his refusal ; and in turn Capt. Gilbert and his men were killed at once. Capt. John Gilbert's descendants are living to-day, not

only in this town, but in New Haven, and the spirit of patriotism, love of liberty and devotion to country have always characterized their action.

I further noticed that your president mentioned that your town had excellent educational advantages. I do not fully know how it is to-day, but I have no doubt your historian is correct in his statement. Years ago I know this town had excellent educational advantages, for at the age of seventeen I taught school in this town myself. I trust you will not consider me facetious in this remark, but should you consider it otherwise it is not my fault.

But I must hasten to my theme, "The History of the American Flag and Its Achievements."

It was on the 14th day of June, 1777, 109 years ago, that Congress passed resolutions which provided a national flag, and describing the same fully. Prior to this time we had many banners of various forms, colors and devices. The colors of our Connecticut standard, established July 1st, 1775, according to the American archives, were blue and orange, and inscribed upon them the motto: "*Qui transtulit sustinet*" in letters of gold, which we construe thus: "God who transplanted us hither will support us."

The flag unfurled by General Putnam July 18, 1775, is thus described in a letter dated at Cambridge July 21, 1775: "Last Tuesday morning," says the letter, "July 18, according to the orders of the day before by Major General Putnam, all the Continental troops under his immediate command assembled at Prospect Hill, where the declaration of the Continental Congress was read, after which an animated and patriotic address to the army was made by the Rev. Mr. Leonard, chaplain of General Putnam's regiment, and succeeded by a prayer. When General Putnam gave the signal the whole army shouted their loud amen by three cheers, immediately upon which a cannon was fired from the fort, and the standard lately sent to General Putnam was exhibited flourishing in the air, bearing this motto: 'An Appeal to Heaven,' and on the

other side '*Qui transtulit sustinet.*'" The letter states that the whole affair was conducted with the utmost decency, good order and regularity, and met with the universal acceptance of all present. Of this flag, bearing the motto of Connecticut and the motto, "An Appeal to Heaven," says General Schuyler Hamilton, in his book (The History of the National Flag of the United States of America), "the latter motto was evidently taken from the closing paragraph of the address of the Provincial Congress of Massachusetts written shortly after the battle of Lexington which ended thus, 'appealing to heaven for the justice of our cause we determined to die or be free,' and which motto, under the form 'Appealed to Heaven,' combined with a pine tree, constituted the motto and device on the colors of the Massachusetts Colonial Army." "In this combination," says General Schuyler Hamilton, of the mottos of Connecticut and Massachusetts, one can scarcely fail to perceive the germ of the emblem of Union which January 2, 1776, replaced the flag we have described above."

General Schuyler Hamilton says that the flag raised by General Putnam was a red flag. Red flags had been used in early times by other nations as emblems of defiance, and for this reason, red was used instead of other colors at the commencement of our Revolutionary struggle.

A letter written January, 1776, dated at Boston, can be found in volume IV of the American archives, which says in corroboration of the above, "I can see the rebel flag very plain whose color a little while ago was red, but on the receipt of the King's speech (which was burnt), they hoisted the Union flag, which is here supposed to intimate the union of the provinces."

In Holmes's Annuals, volume II, it is recorded "that the committee of safety in South Carolina adopted a large blue flag, with a crescent in one corner, blue being the uniform of the South Carolina troops, hence the color of their banner." Another flag was used as mentioned in

the American archives, which had a white ground and a tree in the center, with the motto, "Appeal to Heaven." The same authority says, "the flag called the great Union flag, hoisted January 2, 1776, the day that gave being to the new army, was the basis of our national flag of the present day."

Again, the flag presented by a member of the Naval Committee of the Continental Congress to South Carolina, February, 1776, to be used by the Commander-in-chief of the American Navy, was a yellow flag, in the center of which was a lively representation of a rattlesnake in the attitude of striking, and underneath the words, "Don't tread on me." So you will see that we had abundant flags in early times, and that, in fact, flags have their uses in peace as well as war, and cannot be dispensed with. Their necessity caused a multiplicity of them, and thus prepared the way to the one adopted by Congress June 14, 1777, which was as follows: "That the flag of the thirteen United States be thirteen stripes alternate red and white; that the Union be thirteen white stars on blue field, representing a new constellation."

While this resolve passed Congress June 14, 1777, it was not made public until the third of September following its adoption. According to William Barton, A. M., the thirteen stripes on the flag represent the original States; the same number of stars upon the blue field placed in a circle represent a new constellation, which alludes to the new empire formed in the world by a union of states. Their position in form of a circle denotes the perpetuity of its continuance, the ring being the symbol of eternity; and the eagle placed upon the summit of the staff is emblematical of the sovereignty of the government of the United States.

The first change made in the flag of the United States, after its adoption by Congress, was made January 13, 1794, and was as follows: "That from and after the first day of May, 1795, the flag of the United States be fifteen stripes, alternate red and white; that the union be fifteen stars,

white in blue field." And under this flag we fought the battles of our country in the war of 1812.

In 1818 the flag of the United States was again changed, as it was anticipated that the flag would become too large and unwieldy if a stripe was added on the admission of every new State. The resolutions passed by Congress making this change were as follows: "That from and after the fourth of July next the flag of the United States be thirteen horizontal stripes, alternate red and white; that the Union be twenty stars, in blue field; and that on the admission of a new State into the Union one star be added to the Union of the flag, and that such addition shall take effect on the fourth day of July next succeeding such admission.

The blue field originated in this way. Blue was the favorite color with the Colonies. It was the uniform of the South Carolina troops. Washington adopted blue as his badge. Blue had been identified with the league and covenant in Scotland; and in many other ways blue became identified in our Colonial struggles. And on this account, says General Hamilton, blue became the color of our national uniform as well.

It is recorded that our banner was first used by Paul Jones, Commander-in-chief of the Navy. Other authorities say: "The first instance in which the Stars and Stripes were unfurled was when the brig Nancy was chartered by the Continental Congress to procure military stores in the West Indies, during the latter part of 1775. While at Porto Rico in July of the ensuing year, the information came that the Colonists had declared their independence, and with this information came the description of the flag that had been accepted as the national banner. A young man, Captain Thomas Manderville, set to work to make one, and successfully accomplished it. The flag was unfurled and saluted with thirteen guns. When the brig Nancy was upon her return voyage, she was hemmed in by British vessels off Cape May, her officers succeeded in

removing all the munitions to the shore, and when the last boat put off, a young man in it, John Hancock, jumped into the sea, swam to the vessel, ran up the shrouds of the mast and securing the flag, brought it triumphantly to the shore, amid the hot fire from a British man-of-war."

The first American flag that was made, after the design and approval of Congress, was the one made by Elizabeth Ross, of Philadelphia. But a short time ago three of her children were living, and they bore testimony to this fact. And a lady in Germantown, now ninety-six years of age, adds her testimony in confirmation. The same authority says, "that not only was the first flag made in Philadelphia, but it was first flung to the breeze there." The house in which the flag was first made is still standing, No. 239 Arch street. It is said that when the design was fixed by Congress that General Washington and Col. George Ross visited Mrs. Ross and asked her to make it after the approval and design fixed upon. She immediately informed General Washington that the design was wrong; that the stars were six-pointed instead of five, as they should be. Washington at once saw the mistake, and told Mrs. Ross to make the correction. The flag was duly made, and Congress approved the same, and for several years all the American flags made for government use were made by Mrs. Ross.

I have thus given a brief and imperfect sketch of our national banner, the banner we all love and rejoice in to-day. It is our country's banner, and why should we not love it? Our fathers sustained it and it gave them victory after long years of privation and danger. It is beautiful to look upon, and it grows more beautiful and bright with years. If our enemies despise it, we love it all the better; if defeated under it, it is all the dearer to us because of defeat; and we would change it for no other; for

"It is the flag that o'er land and o'er sea
Fills the heart of the tyrant with fear,
While its folds floating noble and free
Ever brings to the bondman a cheer;

'Tis the flag that our fathers unrolled,
For liberty, peril and scars,
And oh! long shall it wave to the world,
The flag of the Stripes and the Stars.

Our flag in the past has been our anchor and our hope; and in many hot and fiercely contested battles, while it led the way to danger, and demanded courage, it led to victory as well, and to-day we meet, in part to honor and salute it, in the name of more than fifty million people who have grown strong and great under the shadows of its folds. We know its worth and cost, and the blessings it has conferred upon us. And to-day, on the 109th year of its adoption, and the 110th anniversary of the vote by which our fathers in Connecticut in solemn convention assembled and instructed their delegates in the Continental Congress at Philadelphia to vote for freedom as embodied in the Declaration of Independence, which vote was taken July 4th, 1776. On this anniversary the sorrows of yesterday and the fears of to-morrow bring no sad hearts to mar the festivities of this day.

But our fathers 109 years ago looked upon another picture; sad and cheerless as it was, they did not despond, nor did haughty Briton find in them men born to be slaves. Let us hope that the same spirit exists to-day. True there were some among us in early days that played the part of traitors, but the great body of the people were true to their flag, and it led them through the darkness that surrounded them, over frozen ground and snow, across the dark Delaware, onward and onward to Yorktown. Then its stripes became brighter and brighter, and its stars shone out in greater clearness. No gems however effulgent and beautiful ever looked half so brilliant as did our banner on the morning that General Washington gathered his triumphant army around it at Yorktown to receive the surrender of the sword from Lord Cornwallis, the commander of the British forces in America. Why should it not look bright? The war was ended, it was a day of victory and rejoicing. Our veteran

soldiers shouted their loud amen. Cheer after cheer made the welkin ring. Their prayers arose for the success of the flag of the nation.

"Its folds all around us be spread,
Emblazoned with the deeds of the valiant,
And crowned with the acts of the dead."

For a while it was the good fortune of our flag to float in peace, but by and by dark clouds of war again lowered over the heads of our people. Strife and blood were certain; but the day of encounter and battle had not fully come. Diplomacy was doing what it could to avert the storm. Justice and right were on our side and pleaded stoutly and firmly in our behalf. But the British lion grew more and more fierce, his roar more and more terrific. At last war came. It was with our old enemy, smarting under its former defeat. Again our flag was unfurled, and patriots gathered to sustain it and pledge anew their loyalty and devotion to it, and suffer, if need be, in its defense. The war is known to us as the war of 1812. The battles were mostly fought upon the waters, and we encountered what was then known as the strongest maritime nation of the world. But our banner, after a fierce struggle, again floated in triumph, and songs of rejoicing were again heard throughout our borders. Our nation was at peace, and the glad tidings of great joy were proclaimed to the inhabitants thereof.

"In the flag of our freedom we boast,
Oh! its stripes for the tyrants were made,
And its stars shall light liberty's hosts,
If the tyrant shall dare to invade.
Freedom, glory, is stamped on each fold,
In peace, or in peril, when war's
Hostile banner shall meet it unrolled,
The flag of the Stripes and the Stars."

This war gave us a new national song. I refer to Key's "Star Spangled Banner." The bombardment of Fort McHenry was the occasion of its production, and called forth his grand eulogy on our nation's banner at an hour of great

peril and danger which it was then passing through. How deeply and how strongly he loved our flag. Let a few lines of his own words tell.

" Oh! say can you see by the dawn's early light
What so proudly we hailed at the twilight's last gleaming,
Whose broad stripes and bright stars, through the perilous night,
O'er the ramparts we watched were so gallantly streaming,
And the rocket's red glare, the bombs bursting in air,
Gave proof through the night that our flag was still there.
Oh! say does the star spangled banner yet wave
O'er the land of the free and the home of the brave?"

" And where is the band who so vauntingly swore,
'Mid the havoc of war and battle's confusion,
A home and a country they'd leave us no more?
Their blood hath washed out their foul footsteps' pollution.
* * * * *
And the star spangled banner in triumph doth wave
O'er the land of the free and the home of the brave."

Time rolled on, and under the protection of our flag manufactures increased, earth produced abundantly, industry of all kinds received its just reward for labor ; science, art and literature advanced step by step to a higher state of perfection. Our country made rapid strides in almost everything important to us as a people. Our growth was such as to give great encouragement. Gigantic steps towards a higher civilization were plainly visible in all directions. Steamships and railways, canals and other modes of transportation multiplied ; and the telegraph, an invention of our own, added brilliancy and luster to the sciences already enjoyed by us. And nothing more seemed wanting to make us great, happy and prosperous. But our flag, so great and powerful in peace, so desirable to give prosperity to a nation, was soon called upon to take another step. And from the mouth of the Rio Grande it led our conquering army over the plains of Mexico. Victory after victory followed its advance. It floated in triumph over the battle fields of Monterey, Palo Alto, Cerro Gordo, Buena Vista and many others. It stormed and carried the heights of Chapultepec, and by the hands of our gallant Seymour our flag was vic-

toriously placed upon the ramparts of the fortress. And neither was its progress stayed until its final and complete victory, when it waved in glory over the "halls of the Montezumas," and Mexico was brought to acknowledge its power, its prowess and its mercy. Our flag is now known and honored in every part of the civilized world; and under its folds our seamen and citizens, wherever they may be, find a safe protector. It has streamed around the globe time and again; it has been planted upon our highest mountains and peaks. Everywhere it is respected because of its worth. It stands to-day symbolizing Freedom, Unity, Nationality, Courage, Fortitude, Strength; age, endurance and enterprise also add brightness to its colors. And why should it not be respected?

Said a little girl to her mother during the late war: "I know why it is that our flag is respected, and will be victorious." "How so?" says the mother. "Because," says the little girl, "the blue heavens are dotted all over with stars, and to-day, just after the shower, I saw the remaining part of our starry banner in the sky, and it spanned the heavens. It must be victorious, *for it is God's banner*; and father will return shortly to us." It is the same banner that Ellsworth, at Alexandria, would hoist in the place of one that did not belong to our whole country, and he forfeited his life because of his love of it. It is the same banner concerning which General Dix gave his memorable order, to wit: "Whoever attempts to pull down the American flag shoot him on the spot." It is the same banner that patriots have chosen for a winding sheet. It is the same banner that led the little band upon an errand of mercy and science to the polar seas, under Dr. Kane, in pursuit of Sir John Franklin and his men, who sailed under a British flag. Here again it was destined to endure great suffering, hardship and privations. But it added glory to its renown already gained, because of its errand of mercy and humanity. And the same flag that accompanied him on another expedition—and it had already floated far-

ther north and farther south than any other one flag in the world—is known as the “Grinnell flag of the Antarctic.”

It had accompanied Commodore Wilkes in his far off southern discovery, and had been on two voyages to the Polar seas, and it has been its destiny to float over the highest northern land, not only in America, but on the globe. It floated at the mast of the vessel on which Doctor Kane wrote some of the finest poetical imagery ever recorded, when surrounded by the unbroken silence of an Arctic winter. He says in describing the scene around him: “The intense beauty of the Arctic firmament can hardly be imagined. It looks close above our heads, with its stars magnified in glory, and the very planets twinkling so much as to baffle the observation of the astronomer. I have trodden the decks when the life of the earth seemed suspended—its movements, its sounds, its coloring, its companionship—and as I looked on the radiant hemisphere circling above me, as if sending worship to the unseen center of light, I ejaculated: “Lord, what is man that Thou art mindful of him,” and then I turned my thoughts to the kindly world we had left behind, with its revolving sunlight and shadow, and the other stars that gladden it in their changes, and the hearts that warmed to us there, till I lost myself in the memories of those who are not, and they bore me back to the stars again.”

As an American I am rejoiced to quote in your hearing this beautiful imagery of Dr. Kane, and I glory in the thought, that these lines so full of beauty, so delicate and rich, and yet so full of heart, and love, were written by an American, on board of an American vessel, bearing aloft the glorious ensign of our republic. How great the heart of Dr. Kane! And how noble was his mission! Science and humanity alike cherish his memory, and our dear old flag becomes all the brighter because humanity and good will to man are among its attributes.

The nation to whom this flag belongs, has reason to rejoice in its many victories, and we hope for the contin-

uance of the nation it symbolizes. This day we wonder not that great men, as well as good, loved our Union and spoke in strains of eloquence in its behalf; that it might not become broken and dissevered, discordant, belligerent. Webster, in his great speech, tells us how much we are indebted to this Union which our flag represents, and prays that his 'eyes' last feeble glance may see the gorgeous ensign of the republic, now known and honored throughout the earth, still high advanced; its arms and trophies streaming in the original luster, not a stripe erased or polluted, not a single star obscured, bearing for its motto no such miserable interrogatory as 'What is all this worth?' or those other words of delusion and folly, 'Liberty first and Union afterward;' but everywhere, spread all over in characters of living light, blazing on all its ample folds, as they float over sea and over the land, and in every wind under the heaven, that other sentiment, dear to every American heart, 'Liberty and Union; now and forever, one and inseparable.'"

But, alas, how near our Union came to be broken, dissevered, and our flag robbed of half of its lustre and brightness! Let the firing upon Fort Sumter tell. I will not weary you with a recital of the wrongs and abuses that were heaped upon it, for the scenes and memories of those days are still fresh to us all. But we may say that the thundering upon our flag at Sumter rallied the patriots of this land, and they flocked together around it to protect it or die. The struggle was long and vigorous; we were of one blood. "Greek met Greek," and war in all its fury spread over our fair land. Years rolled by and the war continued. At last, thanks to the patriotic boys in blue, and the steady hand of our own immortal Lincoln, our Union was preserved and our flag triumphant. Yes, thanks I say to our boys in blue, some of whom sacrificed life, others the comforts of home, endured hardships and privations, many of them in prisons and prison pens, suffering beyond the power of man to describe. But at length conquerors they were, and the stars and stripes instead of an-

other flag waved over its rightful possessions. Then it was that we "rallied around the flag, boys, rallied once again, shouting the battle cry of freedom."

And to-day we would express our gratitude to the Great Ruler of nations for the triumph of our flag and its well earned victories over those who would destroy it and plant another in its place. But now the old flag waves all the brighter. Freedom means more to-day than before the struggle. For

"No slave is here, our unchained feet
Walk freely as the waves that beat off our coast."

Then on this anniversary, commemorative of the 109th year of our flag's existence, let us pledge anew our devotion to it and the nation it represents. May we love the old flag more and more, as time rolls on; then glory and brightness will surround it, and its dazzling beauty and effulgence will more than equal the auroral light or the splendor of the morning sun. Then it will continue to be the flag of our children and our children's children, as in early times it was the flag of our fathers. It is the

Flag of the free heart's only home;
By angels' hands to valor given,
Thy stars have lit the welkin dome,
And all thy hues were born of heaven.
Forever float our standard sheet!
Where breathes the foe but falls before us,
With freedom's soil beneath our feet
And freedom's banner waving o'er us.

PROF. S. E. BALDWIN'S ADDRESS.

LADIES AND GENTLEMEN: I think you have some right to be surprised to see so many New Haveners upon the stage. But in the venerable volume with which your president opened the meeting, by reading your charter you may have noticed that in the original incorporation of the town, a committee was appointed to set out to Hamden her due proportion of the poor of New Haven. It has been the general belief of our town, that they did not set off quite enough, and our selectmen are here to-day, to bring the rest. And this is the rule in New Haven, that all able bodied paupers must earn their meals if they get them at the town's expense. You have heard my friend, Mr. Sperry, earning his, and now I am earning mine.

In his history of the American flag, he only made one mistake, and that was in regard to the State Flag that General Putnam carried with him to Bunker Hill. He did not tell us why it was red. General Putnam knew what kind of a flag the auctioneers used in Connecticut, and he was going to sell out all the interest of King George the Third, in this country.

We New Haveners have felt more at home here, since we heard from one of our party, Mr. Goodyear, that he and his family have owned this lot we meet on for two hundred years.

As we stand here on land that to-day belongs to Hamden, and one hundred years ago was in the jurisdiction of New Haven, no one can congratulate you on your century of independent existence more than the citizens of the mother town. The true source, as his Excellency, the Governor has hinted, the true source of all the strength of American Institutions, lies in the number of its self-governing political communities. Whether you call them

towns, counties or states, the principle is the same: But, nonsense aside, it is local self-government. It is the right of every considerable body of men, living together, to tax themselves, and to regulate, as they best please, the general order of their lives and their relations to each other.

Hamden left New Haven in 1786, because her inhabitants thought they were better able to manage their local affairs themselves, than if they had the interference of voters on the edge of Branford. That they were right, your prosperity and our prosperity in New Haven alike testify: There can be no effectual government by town meeting, unless it is held within easy distance of every voter. And this lesson the older towns of Connecticut learned early. It has made Connecticut the land of steady habits and strong local attachments.

We love the town we live in, and it is a sentiment always to be encouraged. We love our town as we love our state, our native land, each loved and all loved, because they make us as free as we are strong; because they make it possible for a people to grow great without ceasing to be able to govern themselves. This is the lesson that England is learning from centuries of Irish misrule, and I hope that Mr. Gladstone will make her see that the only remedy is Home Rule.

We have taught England the good of the public school, let her take next our American theory of local self-government.

The Reform Bill of 1832, and the recent extensions of Parliamentary suffrage have swept away almost the last vestige of royal authority from England. France, within the century, has changed from a democracy to an empire, and then to a kingdom, then back to an empire, and then to a republic. The Empire of Germany has swallowed up nearly the whole of Central Europe. The Kingdoms of Italy, Greece and Spain, are all new.

Among all these changes stands the United States of America unchanged, just as she was when she adopted her National Constitution in 1789.

We have a history to be proud of as Americans, and we here in Connecticut have a longer history of our own to be proud of. Although our State may be a small one, it has always been found ready to do its duty; in the wars of King Philip, in the siege of Louisburg, in the struggles of the Revolution, in the shock of the civil war, her regiments have always been at the front; her leaders true; her people firm. And these institutions for which our fathers lived, and, if need be, died, we do well to commemorate on days like this. A hundred years of growing population and spreading industry, a hundred years of honest government, a hundred years during which no invading army has touched this soil; these things make up for Hamden a history that may not be a dramatic or brilliant one, but it is something better. It speaks of happy homes, of busy mill wheels, of self-supporting churches, of schools open to the poorest at the expense of all. This is the history of Hamden for a hundred years, and anniversaries like these teach us to recognize the blessings that we possess.

Let the day serve to remind us all that we have received from our fathers a great inheritance in institutions that are worth more than property—institutions on which all property depends—and this inheritance it is our business to transmit to our children.

One hundred years from to-day this anniversary will be celebrated on this spot before a new audience, by a generation yet unborn. Let it be ours to do what we can to leave to future times unimpaired the heritage of freedom and self-government which is the ancient glory of the towns of Connecticut.

ADDRESSES AND REMARKS.

REV. MR. D. MCMULLEN, PASTOR OF THE METHODIST
SOCIETY, HAMDEN PLAINS.



CELEBRATED minister, now dead, being called upon to speak, said, "that speech is silvery and silence is golden." I prefer to give you the gold and sit down, for I am only a "bird of passage" and am not "to the manor born," and probably owe it to the fact that I am a minister amongst you that I am now called upon to speak.

I am glad to have the pleasure and honor of taking part in this Centennial celebration, and to congratulate the town of Hamden for having attained the ripe old age of one hundred years to-day. We have heard that it is not in the power of the General Assembly to disfranchise you, and constitutions are not likely to be changed, and so a hundred years from to-day the town of Hamden will doubtless be a great deal more populous and a great deal stronger than it is to-day. I appreciate the sentiment uttered by the Governor of the State, that all the citizens of the town of Hamden will go home better citizens than when they came this morning. I am sure that I shall go home to-night feeling prouder and better than I did this morning.

I was much interested in the discourse concerning the flag. The red, the white and the blue may be regarded as emblems; the red of war, the white of purity, and the blue of loyalty.

I was glad to hear of the origin of the name Hamden—John Hampden! A great name, and I pray that the town of Hamden may never disgrace the name it bears, as it never has disgraced it in the past.

And I am glad that we stand here to-day together around the firm platform of religious understanding.

We are all standing on the same platform, and we have in our churches the only kind of unity that we can have ; we have the unity of the spirit in a bond of peace. We agree to disagree on unessential things, and the time has come when the fences have been broken down between the different churches, that we can attend each other's places of worship, and yet we all prefer our own religious belief. I pray God that His blessing may rest upon all churches, and I thank Him that the time has come when Father Putnam and myself can exchange pulpits. And as revolutions never go backwards the time will never come again when the old time fences will be built up between the churches.

REV. FATHER HUGH MALLON.

I am in a position that is rather awkward to me. I am not accustomed to address such a large body of people, but the occasion certainly is one that I could not well pass without being present, and scarcely could let pass without saying a word of encouragement and congratulation to the town of Hamden. I have been associated with you for the last nineteen years, and certainly my relations with you have been of the most congenial kind. I have always found you ready to assist me and my struggling people in anything that I undertook. The good will that you have always shown and felt, I feel and always will feel. And I am very glad that the occasion has come—the Centennial celebration of the town of Hamden.

And I have learned more from his Excellency, the Governor of Connecticut, regarding the power that is placed in the towns of the State of Connecticut than ever I knew before, and he has given me a new idea of what would make our home across the Atlantic happy—self government. Home Rule, as he well says, a town in itself, is a little

community of men who control their own affairs and promote their own prosperity, and thus make themselves happy.

This certainly is new information to me in regard to the laws that govern the towns and counties and the State in general. I have learned certainly to-day to think more of this town of Hamden ; especially its history has been to me a new one in many particulars.

I did not understand fully its beginning, its troubles, and its willingness to help in everything that required manhood. They went forth in the early days of the declaration of independence, and they upheld it with firmness and brought it home in glory.

HON. HENRY TUTTLE.

I will not weary your patience long, for there are large numbers present whom I would much rather listen to than to have you listen to me. It is with the greatest pride and pleasure that I see before me such a multitude assembled here for the purpose of uniting with us in this grand celebration of ours ; it is also an additional pleasure to me, and I presume to all of you, to see so large a number of old men here to-day ; old gray-headed men who have lived past the usual age of men, many of them nearly 90 years of age, many who have filled important positions for the people in this town. And let me say to you, old men, that your race and mine is nearly run, and the places that you have filled have soon got to be filled by the young men, and I believe that I speak the sentiments of all of you, when I say that I hope and trust the young men will fill the places far more acceptably than we have. We hope that the young and rising generation will so economically manage the affairs of this town hereafter that the people will be ready to exclaim, "well done good and faithful servants."

If we are rightly informed by history, our people have been noted for preparing for war in time of peace. Come to the Loan Exhibition, and you will there see exhibits showing that men from this place took a part in the Revolution. Again, when the British entered New Haven, the farmers of the town of Hamden left their plows in the field to seize the muskets and whatever arms they had, and rush in to the city of New Haven, to help repel the invaders. Still later on, in the war of 1812, when the call for troops was made, Hamden responded to the call and sent a large number of men who served in that war until peace was declared. A record of every one of them has been preserved by me.

Still later, in the war of the rebellion, the patriotic young men of Hamden responded to the call for men, they went to the front and were in many a hard fought battle, and there are many present here who mourn the loss of near and dear friends who fell while fighting manfully for the American Union.

It is with great pleasure that we see our State officially so well represented here to-day. We hope and trust that all proposed laws of our State will be wisely considered before being made, and so properly administered that the rising generations may have reason to look with pride upon this good old Commonwealth of Connecticut.

JAMES H. WEBB.

Having already had my dinner, I feel somewhat constrained to perpetrate upon you one of the stupid speeches of Mr. Hale's double. A clergyman, who was always called upon to make speeches on occasions like this, found it such a bore that he went to a poor house and found a man that looked like him and sent him around in his place. His double was instructed to say, that so much had already been said on the subject, and so well said, that he could not see the necessity of saying any more.

But I am conscientious, although I belong to a profession the members of which some people say have no conscience.

And so, having had my dinner, and received my pay, I cannot sit down without saying something. Indeed, I never realized until this day what a grand old town Hamden is. And I don't believe the people of this town half realize their privileges.

We have heard a great deal to-day, and a great many things that we ought to be very proud of. In New York State the poor are cared for by counties, and the roads are cared for by counties, but here the town controls, and as you have heard to-day, from the act of incorporation, the town has the right to fish in New Haven, which is a very valuable right. I recall only yesterday, a man came into my office and complained that somebody had been digging clams in front of his barn, down at Short Beach. I dare say it was some Hamden farmer who had been to the town clerk's office and read this act of incorporation.

I have never before realized the natural beauties of this valley so vividly and forcibly as now, with its magnificent mountain range on the north, and East and West Rocks on its sides. We have, indeed, a goodly heritage, and we ought to be proud of it.

And I feel proud of this town that it shows such a public sentiment, such a local town pride, as has made this occasion possible. And I feel it the more deeply because there are two difficulties which the people of this town have to contend with; first, we are so near New Haven that every important movement tends to be swallowed up in the great city lying only five miles away, and the second is that we have no common center, and that in itself is a very great disadvantage, and retards the building up of a town pride and local sentiment of our own.

And another thing is very important, we have no concentration of population in the town of Hamden; it is diffused. This Centerville should be called Hamden; the

Government did perfectly right when it designated the post office of this village the post office of Hamden. It would help largely in developing the town pride if it were so called. Our people, as we all know, are scattered from Whitneyville in a series of small hamlets to the Cheshire line.

I can only say, Mr. Chairman, in closing, that I hope with you all, that the century upon which we are now entering may be as illustrious and prosperous and as happy as were the citizens who made the town illustrious in the past.

MR. IVES, OF MOUNT CARMEL.

I ought not to need much of an introduction, for I am one of the old inhabitants and was born in Hamden.

Allusion has been made to the slow method of carting freight from New York to Boston by ox-teams. This was within my recollection. It was my father who had two of those teams on the road, and three of my brothers were engaged in driving them.

I have placed in the Loan Exhibition a piece of one of the old wagons made by my father for this freighting. He made one that would carry as much as two of the ordinary carts. He took two cart wheels and two wagon wheels and put on a box body thirteen feet long, four feet wide and eighteen inches deep. It was made the year that I was born, and did good service. It was slow and tedious work walking from New York to Boston in those days, and but few of our young men would care to undertake such a journey to-day.

COL. A. H. ROBERTSON, OF NEW HAVEN.

Before dinner I heard read from the records, that when the town of Hamden was set off from the town of New Haven, a certain number of poor people were placed on the town of Hamden as her portion. One of the speakers said

that the poor in New Haven had to earn their dinner before they ate it. Now I feel highly complimented that you gave me the dinner before you heard the speech, and I feel confident if you had heard the speech before I got the dinner, I would have had to go without the dinner.

In these Centennial celebrations it brings to the mind of each one of us that we belong to these little towns who furnished the first constitutions the world ever saw. I think I can say without contradiction, that they are due to the little republics of the State of Connecticut.

Gentlemen, there is something further and beyond the past in these celebrations ; they bring together all classes of society, all differences in religion, and all differences between capital and labor are annihilated. And the people that form one of these celebrations not only benefit the town of Hamden, but the State of Connecticut, and the whole of the United States are made better than they were before. I cordially thank you for the entertainment I have received here to-day ; I had not intended to say a word, and I have made these few remarks as best I could at the request of the chairman.

THE LOAN EXHIBITION.



THE vacant store adjoining the town clerk's office was secured for the exhibition and the shelves and counters were soon filled with interesting relics from all parts of the town. The collection was visited by thousands during the day, and general regret was expressed that it could not be kept together for a longer period. There was not time for the preparation of a catalogue of the objects, and only a partial list of them can be given, for which the History is chiefly indebted to Miss E. E. Dickerman, of Mt. Carmel.

LIST OF OBJECTS AND EXHIBITORS.

Ancient Clock, exhibited by Mrs. John Andrews.
 Pair of Silver Candlesticks, Mr. Hobart Kimberly.
 Ancient China, Mr. Jared Dickerman.
 Piece of the Pulpit of the first church at Mt. Carmel, Mr. Jared Dickerman.
 Part of the wagon used in carting from New York to Boston, Mr. Lucius Ives.
 Ancient Chair, Mrs. Heath.
 Ancient Slippers, Mrs. Heath.
 String of Gold Beads, Mrs. Eneas Warner.
 Mason's apron, over 100 years old, Mrs. Geo. Dudley.
 Ancient Deeds, Mrs. Geo. Dudley.
 Account Book, over 100 years old, Mrs. Geo. Dudley.
 Continental money, Mrs. Geo. Dudley.
 Pine Tree Shilling, Mrs. Geo. Dudley.
 Continental money, Dr. Swift.
 Chair, over 100 years old, Miss Julia Dickerman.
 Pewter Platter, Miss Julia Dickerman.
 Home-made linen sheets, Miss Julia Dickerman.
 Gold sleeve buttons, 180 years old, L. A. Dickerman.
 Gold Ring, over 100 years old, Miss Ella Leeke.
 Ancient Linen, Mrs. C. A. Burleigh.
 Ancient China, Howard Doolittle.
 Old-fashioned Bonnet, Mrs. Samuel Baldwin.
 Center table, Mrs. Samuel Baldwin.
 Shell Back Comb, Mrs. Samuel Baldwin.

Bible, over 200 years old, Mr. Samuel Baldwin.
Tuning fork, Mr. Samuel Baldwin.
Pair of pistols, Allen D. Osborn.
Hand-made Gun, Mr. J. J. Webb.
Cartridge-box, Mr. J. J. Webb.
Saddle-bag, Mr. J. J. Webb.
China soup tureen, Mrs. J. J. Webb.
Silver Watch, old, Mr. Edwin Potter.
Ancient Counterpane, Mrs. R. H. Cooper.
Writing Desk chair, Mrs. N. B. Mix.
Ancient shell comb, Mrs. N. B. Mix.
Calashes, nearly a century old, Mrs. N. B. Mix.
Tow, as used for spinning, Mrs. N. B. Mix.
Medals and Diplomas, chiefly for agricultural products, Mr. G. W. Bradley.
Flint-lock gun, Mr. H. W. Tuttle.
Brown Satin Vest, Mrs. Fannie Ives.
Infant's cap worn by the late C. W. Everest, Mrs. Everest.
Ancient Linen, Mrs. Charles Alling.
Ancient China, Mrs. W. W. Woodruff.
Baptismal dress and cloak, Miss Eliza Bassett.
Spectacles, over 100 years old, Mrs. L. H. Bassett.
Ancient silk shawl and lace, Mrs. James Ives.
Collection of arrow heads and Indian relics, Herbert Dickerman.
Ancient oil-painting, Mrs. Olmstead.
Ancient chair, Mr. Jared Atwater.
Gun, of ancient date, Mr. Jared Atwater.
Silver tea-set, Mrs. Burton.
Spoons, Mrs. Burton.
Pair of slippers, Mrs. Burton.
Fan, Mrs. Burton.
Masonic apron, Miss Mamie Dickerman.
Pair of home-made trousers, coat and shoes, Mr. J. B. Jacobs.
Swords, of old-fashioned make, exhibitors unknown.
Baby Jumper, or walking stool, Mrs. Ezra Alling.
Ancient China, Mrs. Ezra Alling.
Ancient China, Mrs. Russell.
Cup and saucer that came over in the Mayflower, exhibitors unknown.
Ancient China, Mrs. A. O. Bench.
Silver Pepper-box and Spoon, over 200 years old, with Tower mark, brought from England to Casco Bay, Maine, in the seventeenth century, and by Captain Solomon Phipps to New Haven, before 1776, and since used in this town and vicinity, Danforth Phipps Blake.
Cartouche-box, patent of Captain Jonathan Mix, Wm. P. Blake.
Patent from the United States to Captain Jonathan Mix for the manufacture of elliptic carriage springs, with signatures of Thomas Jefferson and James Madison, Wm. P. Blake.

Table used at the Academy of Music, Philadelphia, when General Grant was nominated for the second term, Wm. P. Blake.

Embroidery made in 1796, Mrs. Eliza Sherman.

Tinder-box, with tinder, flint and steel, used to obtain fire in Hamden as late as the year 1885, Wm. P. Blake.

Blankets made by the Navajo Indians, Wm. P. Blake.

Cotton Gin. The original model of the cotton gin made by the inventor, Eli Whitney, Eli Whitney, Jr.

Welsh Bible. On the inside of one of the covers of this Bible an old manuscript receipt is pasted, of which the following is a copy:

MIDDLETOWN, 10 July, 1777.

Rec'd of Capt. Sam'l. Hearst by the hands of Sergt. Sam'l. Hubbard for our service in defence of this state from the 26th of April to ye second of May last the sums respectively affixed to our names.

	£.	s.	p.
* * ESTER BISHOP,	0	14	8½
STEPHEN PARSONS,	0	85	
EPRAHIM CROFUT,	0	15	12
SAMUEL JOHNSON,	0	15	11
SOLOMON SAGE,	0	14	02
STEPHEN WILLCOX,	0	14	12

[Exhibited by J. Barnard.]

Old Pamphlet Sermon: The | necessity of | atonement | and the consistency between that and | free grace | in forgiveness. | Illustrated in three sermons | preached before his excellency the Governor | and a large number of both Houses of the Legislature of the State of Connecticut | during their session at New Haven in October, A. D., MDCCLXXXV. By Jonathan Edwards, D.D., Pastor of a Church in New Haven. New Haven: Printed by Meigs, Bowen and Dana, MDCCLXXXV. [12mo., pp.64].

Exhibited by James Ives.

Pamphlet Sermon: The examination of the late Rev'd President Edward's | Enquiry on Freedom of Will. | Continued | [etc., etc.] To which are subjoined strictures on the Rev'd. W. West's essay on Moral Agency, etc. By James Dana, D. D., pastor of the church in Wallingford. New Haven: Printed by Thomas and Samuel Green, 1778.

Exhibited by James Ives

Ancient Document, by members of the Tuttle family, Miss Emma L. Blake.

PART II.

HISTORICAL AND DESCRIPTIVE.

TITLE, BOUNDARIES AND TOPOGRAPHY.

PURCHASE OF THE LAND FROM THE INDIANS.

WHEN the colony of New Haven was established in 1638 the region was inhabited by the Quinnipiac Indians, a tribe of the Mohegan nation. Dr. Dwight, writing in 1811, calls them the Mohehaneews, or Muhheakunnuks, and says that "Charles," the last sachem of the tribe, died about eighty years before (about 1730).

A tract of land, belonging to these aboriginal occupants, eighteen miles long and thirteen miles wide, was purchased November 24th, 1638, by the Rev. John Davenport and Theophilus Eaton, in behalf of the first planters of New Haven, of Momanguin, Sachem of Quinnipiac, and partly of Montowese, Sachem of Mattabeseck (Middletown). This, of course, included what is now the town of Hamden.

The farmers of Hamden, when ploughing or hoeing, occasionally find spear and arrow-heads of stone, and are thus reminded of the former occupation of their lands by savage tribes. The arrow-heads are generally made of white quartz, and they are rudely fashioned, but do not differ greatly from the arrow-heads found in other parts of the Atlantic states. Arrow points, or flakes of obsidian, or volcanic glass, so common in the volcanic regions of the Rocky Mountains and beyond, have not been found here.

ROYAL CHARTER OF 1662.

The charter of Connecticut, obtained by the exertions of Winthrop, from Charles II, king of England, in 1662, conveyed to the "Governor and Company of the English Colony of Connecticut, in New England, in America." "All that parte of * * * New England * * * bounded on the east by Norrogancett River, commonly called Norrogancett Bay, where the said river falleth into the sea, and on the north by the lyne of the Massachusetts plantation, and on the south by the sea; and in longitude as the lyne of the Massachusetts colony, runinge from east to west, that is to say, from the said Narrogancett Bay on the east to the South Sea on the west parte."

This grant thus included parts of Rhode Island, New York and New Jersey, and a strip of land seventy miles wide, extending westward across the continent from New Jersey westward, between north latitude 41° and latitude 42° 2' to the Pacific Ocean. This remarkable grant included what is now the northern part of Pennsylvania, the lake region of Ohio, the city of Chicago, Davenport Iowa, a large part of the territory of Nebraska and Wyoming traversed by the Union Pacific railway, a large part of Utah, taking in the northern part of the great Salt Lake and the city of Ogden; the northern part of Nevada, and the northern counties of California to the south line of Oregon.

EXTENT AND BOUNDARIES OF THE TOWN.

The town of Hamden as set off from the town of New Haven by the General Assembly of Connecticut in 1786 consisted of (1) the Parish of Mt. Carmel and (2) of the region within the limits of the Seventeenth Military company in the Second regiment of militia. The bounds of this Seventeenth military company are given in the act of incorporation as follows:

"Beginning at the foot of the Long Bridge, so called, [Lewis's Bridge on the Middletown turnpike], from thence a strait line to a dwelling house owned by Mr. Hez'h. Sabin*, now in possession of George Peckham; thence on the north side of said house a strait line to the southeast corner of the farm lately owned by Col. John Hubbard dec'd; thence in the line of said farm to the top of the West Rock; thence on said Rock northerly to the southeast corner of Woodbridge; thence in the line of said Woodbridge to the southwest corner of Mt. Carmel Society: thence in the south line of said Society to North Haven line; thence upon said line to the East river; thence along the middle of said river to the first mentioned corner."

The bounds of the Parish of Mt. Carmel are not given in the act, but according to the records of the colony, reciting the action of the General Assembly in 1757, they were as follows:

"On the memorial of Daniel Bradly, Israel Sperry, Joel Munson and others, inhabitants of the First Society in New Haven, living in the north part thereof, praying that they may be formed into a distinct ecclesiastical society, as by their memorial on file: Resolved by this Assembly that the inhabitants and persons living within the limits and

*Hezekiah Sabin's house stood on the top of the hill south of Whitneyville, and on the west side of the avenue, near where Dr. Crane's house now stands. After Sabin's occupation it was known as the "Peckham place." The cellar of the old house was visible until within a few years. Mr. Eli Whitney built and occupied a house near there. The place was sold to the Suydam family, and is now owned by Dr. and Mrs. Crane.—W. P. B.

bounds following, viz: Beginning at the southeast corner, at the mouth of Shepard's Brook, so called, where said brook falls into the Mill River, thence running westward a parallel line with the line on the south side of the Half Division, so called, unto the east line of the Parish of Amity, thence northward in said line to Wallingford bounds, and to extend northward from the first mentioned bounds by said river, being the west side line of North Haven parish bounds until it comes to the south side of James Ives's farm; thence east in the south line of said farm unto the highway that runs north and south, and thence north by the said highway unto Ithamar Todd's farm, including said farm within the limits of said parish, and thence to the Blue Hills, so called, and thence easterly in the line of said North Haven bounds until it comes to said Wallingford bounds, and thence westerly in the north side line of said New Haven bounds unto said Amity line be, and hereby are, made a distinct ecclesiastical society, with all the powers, privileges and immunities that other distinct ecclesiastical societies in this Colony already established by law have, and that the same shall hereafter be called and known by the name of Mount Carmel."*

In May, 1758, the inhabitants of the Parish of Mount Carmel represented to the Assembly, by memorial, "that in the description of the bounds of the parish by the committee that lately laid out the same, there was a mistake or uncertainty with respect to a highway referred to lying eastward of James Ives's farm, also, that greater certainty was wanting in the bounds on the southward side of the Blue Hills; further representing, that it would be convenient and best to have the bounds on the east, near said Ives and Ithamar Todd's farm enlarged a small matter, and also on the south to have the bounds extended down as low as the south bounds of North Haven parish; praying to have said enlargements made, or a committee to view, etc., as by the

*Public Records of Connecticut, October, 1757, Vol. XI, p. 77.

memorial on file may more fully appear: Resolved by this Assembly, that Roger Newton, Esq., Capt. Moses Hawkins and Mr. Enos Brooks be a committee, and they are hereby empowered and directed as the application, and at the cost of said inhabitants, to repair to said parish, and having notified the neighboring parishes, viz.: New Haven First society and North Haven, to view the situation and circumstances of said parish and said neighbor parishes and make report in the premises to this Assembly in October next."

In October this committee reported, "that said parish ought not to be enlarged as prayed for, but that the bounds thereof ought to be ascertained in manner as set forth in said report; and said report hath been read, accepted and approved of by this 'Assembly' as by said memorial, appointment and report of said committee on file appears. It is therefore resolved by this Assembly that the bounds of said parish for the future shall be as follows, viz.: "Beginning at the southeast corner at the mouth of Shepherd's Brook, where said brook falls into the Mill River; thence running westward a parallel line with the line on the south side of the half division, so called, unto the east line of the Parish of Amity; thence northward in said line to Wallingford bounds, and to extend northward from the first mentioned bounds by said river, being the west side line of North Haven parish bounds until it comes to the south side of James Ives's farm, and to run eastwardly a parallel line with the south line of said James Ives's farm until it comes to a highway four rods wide; thence north by said highway unto Ithamar Todd's farm, including said farm within the limits of said parish, and thence to the Blue Hills, so called, and to run eastwardly by a highway four rods wide, that is, by the southward side of the Blue Hill land, so called, until it comes to a highway six rods wide, that runs northwardly by the east side of Lt. Blacksley's house, to run by said highway until it comes north of the widow Todd's dwelling house, thence eastwardly on the

southward side of said Blue Hill until it comes to Wallingford bounds, at the east end of said hill, and thence westwardly in the north side line of said New Haven bounds unto said Amity line." Pages 193, 194.

For a further account of the formation and history of the Mt. Carmel parish reference is made to the contribution to the ecclesiastical history of the town, by the Rev. L. H. Higgins, in this volume.

It would now be difficult to follow these boundary lines by the descriptions. The boundaries of farms have changed again and again, families have passed away, and houses have disappeared.

It has, however, been the custom for generations past to have the boundary lines of the town perambulated by the selectmen at intervals of a few years, and by this means a traditional knowledge of the town limits has been maintained.

The following, relative to the northern boundary of New Haven, afterwards a part of Hamden bounds, is interesting in this connection.

At the court of election, held at Hartford, in May, 1673, it was granted "that the bounds of New Haven shall runn according as it is agreed betwixt the sayd towne of New Haven, Brandford, Wallingford and Milford." The agreement was as follows:

"That New Haven shall runn two miles and a halfe northward from the foot of the Blew Hills, on the Mill River, upon that river, and the line from a stake there to the foote of the Blew Hills on the East River, and from the sayd two mile and halfe stake along our reare, west and by north, to the end of their bownds; which issue they, the committee for Wallingford, consented to and accepted, and this to be an issue in loue and peace. Memorandum: That the committee for New Haven doe consent that the meadow between the Mill River and the East River northward aboue the Blew Hills shall be Wallingford's as to the bulk of it, and liberty of drowneing it as they

shall see cause, although the line agreed to should cutt through it."

Subscribed by the s'd parties :

John Morse,
John Brockett,
Nath'l. Merriman,
Abraham Doolittle,
Sam'll Andrews.

The marke of
John I C Cowper, Sen'r.,
to the agreement,
excepting the memoran-
dum added about ye
meadow, wherein he
dissents.

Wm. Joanes,
James Bishop,
Matthew Gilbert,
Sam'll. Whitehead,
John Winston,
Abram Dickerman,
Moses Mansfield.

The aboue written is a true copy of the original."*

At the May court in 1674, the following agreement was reached and recorded:

"This writieing sheweth, to all whome it may concerne, that all differences respecting the line or lines for bownds between the townes of New Hauen and Wallingford are forever ended, and agreements made and concluded by persons deputed for, and by each towne whose names are under-written, which agreements are as followeth, viz.: That Wallingford bownds on the east side of the East River shall be from Brandford lyne northerly to Wharton's Brooke, where it crosseth the sowth branch of the sayd brooke, and thence as the brooke runns into the East River; and from the mouth of the sayd Wharton's Brooke, where it falleth into the sayd East Riuer, the sayd East River to be the bound or line upward vntill it come as high as the Blew Hills, and against a tree marked on the west side of the river with a heap of stones caste at the root of it; and from the sayd tree with stones at the root of it, a streight line westward to New Haven, Mill river, where there is a tree marked with a heap of stones at the root of it, being about two miles and a halfe aboue the Blew Hills; and from the sayd tree and heap of stones by the sayd Mill River, a straitte line west and by north to the path which lyeth from Milford to Farmington, by which path is a tree marked and stones cast at the root of it. To declare this to be our firm and full agreement, wee

*Public Records of the Colony of Connecticut, 1675 to 1678; p. 292.

subscribe our hands this 12th day of May, in the year of
Or Lord, one thowsand six hundred seunty fower.*

From Wallingford:

John Brockett,
Samuel Andrews,
Nathaniel Roise.

From New Haven:

The marke of
John I C Cowper, Sen'r.,
Moses Mansfield,
Abram Dickerman.

MAPS OF THE TOWN—AREA.

There is no good recent map of the town showing its extent and boundaries. The United States Coast Survey map of the New Haven region, executed in 1871-1877, under the immediate supervision of the late R. M. Bache, gives an excellent representation of the topography and roads of the southern half of the town, the work not having been extended north of Centerville. This map is on a scale of $\frac{1}{100,000}$ and the differences of elevation are shown by contour lines for each twenty feet.

In the Atlas of New Haven county, published in 1868, by Beers, Ellis & Soule, a map of Hamden is given on a scale of two inches to the mile. By measurements made upon this map the length of the town from north to south is approximately $8\frac{1}{2}$ miles; its breadth at the widest, north part, $5\frac{1}{2}$ miles; and at the narrowest part, 3 miles. Taking the average breadth as a little under 4 miles, the total area is approximately 32 square miles.

Barber gives the average length of the town as $7\frac{1}{2}$ miles; average breadth about $3\frac{1}{2}$; making about 26 square miles in area.

The adjoining towns on the north are Cheshire and Wallingford; on the east, North Haven; on the south, New Haven; and on the west, Woodbridge and Bethany.

*Public Records of the Colony of Connecticut; p. 234.

TOPOGRAPHY.

ORIGIN OF THE GENERAL FORM OF THE SURFACE.

THE Quinnipiac river forms a portion of the eastern boundary, and the town may be said to lie between the broad valley of the Quinnipiac and the summit of the West Rock range. The direction of the greatest length of the town conforms to the direction of these two leading natural features, which is a little east of north, and this general direction is maintained by the chief streams, the smaller valleys and ridges, by the leading highways and by the railways. The valley of the Quinnipiac itself is approximately the same in direction as the great Connecticut river valley further north, and there is good reason to believe that in remote geological history the Hamden and New Haven valley, including the Quinnipiac valley, was the southern prolongation of the Connecticut River valley.

The region first received its approximate form and direction from its fundamental geological structure; and, secondly, from the ploughing and planing action of the great ice-sheet of the glacial era; succeeded by the comparatively modern eroding and depositing action of existing streams.

Mill River, the principal stream of the town, flows through its entire length in a general southwesterly direction. Its principal branch, Shepherd's Brook, flows into it from the north, a short distance above Augerville. Mill river is known as one of the chief sources of supply of the city of New Haven with water, and fills Whitney Lake, the storage reservoir of the New Haven Water company.

The Narrow gorge at Mt. Carmel, through which Mill River flows, was formerly known as the *Steps*.

Wilmot Brook, on the west side of the town, drains a long, deep valley, on the eastern side of the West Rock range, and flowing between West Rock and Pine Rock

through the village of Westville, reaches West River. It has an important feeder from the west in the brook flowing from Wintergreen Lake, also one of the sources of the supply of water to New Haven.

The chief rocky elevations within the town limits are the East Rock and the West Rock ranges and the Blue Hills, now known as Mt. Carmel, or the Sleeping Giant. The bluff terminations of both East Rock and West Rock are, however, a short distance south of the town line. Whitney peak, rising from the northern slope of East Rock, reaches an altitude of about 300 feet. The bluff of East Rock is 360 feet above tide, and the top of West Rock is 387 to 405 feet. Mill Rock rises to the height of 225 feet, and Pine Rock to 271 feet.

The West Rock range increases in altitude northward from 380 feet at the south end of the town to 480 opposite the south end of the Wintergreen Lake; to 575 feet west of Cherry Hill, 600 to 610 near the Merrit place, abreast of the Blue Hills. Mt. Carmel ranges from about 600 to 800 feet in height.

From the top of Mt. Carmel, East Rock appears as a slight and comparatively isolated elevation. Long Island sound can be seen over its summit, and Long Island over the top of the Soldiers' Monument.

The sandstone hills and ridges of the town are all lower than the chief trap rock ranges, and are smoothly rounded off, with flowing outlines. They extend generally in long and approximately parallel lines, and are highest and most extended under the lee or protection of the chief outbursts of the trap rock; this harder rock having broken the force of the denuding action of the ancient glacier. The sandstone formation is also found overlying the bedded trap rocks, and rises in places almost to the summit of the trap ridges. When hardened and changed by the trappean intrusions it resists decay almost as well as the trap, and forms enduring and picturesque bluffs.

From the Methodist church southwards there is a broad,

sandy and gravelly plain of alluvial origin extending to New Haven and the harbor. It extends eastward to Mill River, and westward nearly to the base of West Rock, around the north slope of Pine Rock. This broad stretch of comparatively level land is generally known as Hamden Plains. It is, however, not level, but has a gentle slope toward tide water.

According to measurements and calculations, made by Prof. J. D. Dana, the slope of the bed of Mill River is about fifteen feet per mile, while the slope of the terrace plain raises from nine to thirteen feet per mile.

At the Mt. Carmel gap the river falls at the rate of twenty-four feet per mile, or twelve feet in half a mile, owing to the hard bottom of the trap rock. He gives the following as approximately the height of the terrace plain along Mill River, from Whitneyville northwards:

	Above the River.	Above Mean Tide Level.
Whitneyville dam (by calculation).....	55 feet	55 feet
1.40 m. above, at the mouth of Pine Marsh Creek.....	55 "	72 "
2.25 m. " at Augerville.....	50 "	86 "
4.00 m. " $\frac{1}{2}$ m. south of Ives's station.....	43 "	108 "
4.50 m. " Ives's station.....	41 "	108 $\frac{1}{2}$ "
5.25 m. " South of Mt. Carmel gap.....	36 "	115 "

From these figures he makes the slope of the terrace plain up to the station, half a mile south of Ives's station, to be 12 feet per mile, or for the whole distance to Mt. Carmel an average of about 11 feet per mile.*

We cannot fail to be impressed by the peculiar duality of the chief topographical features at the south end of the town, originating, no doubt, from the two great trappean intrusions, East Rock on one side and West Rock on the other, of nearly equal altitude, and both presenting bluff faces to the south. Adjoining these bluffs we find subordinate ones, or spurs. Mill Rock, stretching westward from East Rock into the Hamden Plain, and Pine Rock, stretching eastward into the same plain from West Rock.

*Memoir on Topographical features of the New Haven region; p. 95.

Mill Rock is separated from East Rock by Mill River, and Pine Rock from West Rock by Wilmot Brook.

A broad river formerly flowed around the west end of Mill Rock. The ancient channel may be traced from Mill River through Pine swamp diagonally across to the Beaver pond valley and West River, by a line of depressions and terraced channels. The wearing action of the river drift, entirely different from that produced by a glacier, may be seen on the ledges at the west end of the Rock. The accumulation of gravelly and sandy alluvions along the broad and comparatively open valley no doubt caused the stream to forsake this outlet and confine itself to the narrower and more direct passage in the gap between Mill Rock and East Rock, where the greater velocity and average fall kept a channel clear. We have also to bear in mind in seeking an explanation that the volume of Mill River, as with others, is no longer as great as it formerly was.

PICTURESQUE SCENERY.

For picturesque beauty and variety of scenery the town of Hamden can hardly be surpassed. The abrupt terminations of the trap dikes, the smooth flowing surfaces of sandstone hills, and the level expanse of the alluvial plains blending with the Sound, all combine to give pictures of new beauty from each different point of view. The higher hills still wear their covering of primeval forest, which, though frequently removed by the woodman's axe, springs up again with renewed vigor, and, if preserved from the wanton fires of spring and autumn, will long continue to delight the eye in summer, and brighten the fireside in winter.

The wonderfully fine views of land and water, of the busy city, and of the undulating hills and plains of Hamden which can be had from the slopes and top of East Rock, are now enjoyed daily by the public. The Farnam drive affords views which cannot be surpassed for variety and interest. Other elevations in the town are remarkable also

for their attractiveness at all seasons, and the beauty of the landscape about them. With the inevitable increase of population and wealth in this town the day is not far distant when all these rock ridges will be prized for residences and pleasure resorts. Mt. Carmel and its adjoining ridges, known as the Blue Hills, are extremely inviting and picturesque, and before the end of another century, and perhaps long before, may become another great public park to give pleasure and health to thousands yet unborn.

LEGENDS OF THE BLUE HILLS.

The Blue Hills have their legends, and have stirred the souls of some of Hamden's sons to poetic effort. The rough resemblance of the sky-line of these hills to the profile of a man lying on his back has gained for them the name of "Sleeping Giant."

SELECTIONS FROM THE POEM OF THE "SLEEPING GIANT,"

By Chas. G. Merriman.

Leagues off, the contour of his massive head
Stands boldly out against the azure sky;
He lies serenely in his rock-bound bed,
While rippling streamlets pass him swiftly by.

And when the atmosphere is calm and still,
His form is covered with a robe of blue;
As if the air-sprites would obey his will;
And bring fair colors out of rain and dew.

* * * * *

And though inanimate and devoid of motion,
A thousand forms of life are busy there,
And like a mother in her true devotion,
He rears them by his tender, brooding care.

And so in his long sleep of countless ages,
Gazing with stony eyes into the sky;
And all devoid of fame on history's pages,
The seasons greet him as they pass him by.

They touch him gently with those magic wands,
 The genial sunlight and the summer rain;
 And to their touches his huge form responds,
 Yielding the rosy fruit and yellow grain.

How many days through all the long, bright summer,
 I've sought his winding roads where daisies bloom;
 Haunting his wooded sides a joyous comer,
 And shouting wildly through his aisles of gloom.

* * * * *

Upon his southern sunny slopes are growing,
 From trellised arbors, acres of the vine;
 And in their tender stalks are juices flowing,
 Ripening the berry for the fragrant wine.

He makes a home in many secret places,
 For the shy partridge and the brooding quail;
 Where steps of man have never left their traces,
 Or keen-eyed pointers scented out their trail.

* * * * *

From many city streets, his distant outline,
 Touches the vision with delicious thrill;
 And longing fancies eagerly incline,
 Your footsteps onward to his dreamy hill.

He lies there like a knight encased in armor,
 And resting on the laurels he has won;
 Or like some wandering and foot-weary palmer,
 Sleeping serenely in the noonday sun.

As we approach him all his robe of azure,
 Slowly dissolves and mingles with the air:
 His drooping neck is but a wide embrasure,
 In a deep wall of rocky ledges there.

Again we pass him silently and slowly,
 Gazing with awe upon his massive head;
 Which rises like some old cathedral holy,
 And fills us with a feeling weird and dread.

In all his moods, and through the changing seasons,
 In summer's rainfall, and in winter's snow;
 I haunt his shades for many untold reasons,
 Veiling the secret thoughts which come and go.

SKETCH OF THE GEOLOGY.

THE NEW RED SANDSTONE.

THE two principal rock formations of the town are the trap rock and the red sandstone. These rocks may be said to form the hills. The glacial drift is but a comparatively thin covering spread irregularly over these foundation rocks. In the valleys there are more recent and alluvial deposits.

The "red rock" of the Hamden hills, so familiar to most of the residents of the town as the underlying rock of their lands, is a portion of the new red sandstone formation of the Connecticut valley. This formation, known to geologists as the Trias, is later in origin than the coal formation, and older than the Cretaceous rocks. Its red color is due to the presence in its substance of a large amount of oxide of iron. This formation, consisting of stratified sandstones, shales and conglomerates, though originally laid down under water in horizontal layers has since been disturbed, uplifted and broken, while through the rifts and rents igneous, melted, trap rock flowed upwards and outwards. This rock filled the cavities, and formed thick bunches and masses between the layers of the sandstone formation, and comparatively thin and nearly vertical sheets, called dikes, where the rents were transverse to the bedding of the sandstones. These trap intrusions form the well known range of hills on the west side of the town, terminating in West Rock; the comparatively isolated bluffs of East Rock, Mill Rock and Pine Rock at the south end of the town, and the Blue Hills, or Mt. Carmel range, at the north.

METAMORPHOSED SANDSTONE.

Portions, however, of these hills and ranges consist of masses of indurated sandstone, and conglomerate, hardened and altered from their original condition by the heated trap rocks, and the escaping steam and gases which accompanied the trap. We find, for example, that a large part of the bluffs of Mill Rock is formed of such altered sandstone and conglomerate, instead of trap rock. The effects produced upon the sandstone beds by the intrusion of the trap rock are well shown at the east end of Mill Rock, where the road crosses the dike at the dam. The cut for the road shows the contact of the two rocks and the alteration of the texture of the sandstone.

Similar effects may be seen in the bluffs along the contact on top of the rock and at the west end, and also at Pine Rock, and at Mt. Carmel. The sandstone and red shales are changed in color from red to grey, and they have at the same time received a change of structure, becoming laminated in planes parallel with the walls of the trap dike, and at right angles to the planes of stratification.

GLACIAL DRIFT DEPOSITS.

Directly overlying the red rock of the hills we find an abundant accumulation of boulders, gravel and soil generally known as the "drift." It is a confused mixture of coarse and fine materials irregularly spread over the hills, in some places much more abundantly than in others, and occasionally marked by the presence of enormous blocks of rock, weighing hundreds or even thousands of tons. These are all erratic blocks, transported by ice, far from their source, and left behind when the vast ice sheet of the glacial period disappeared by melting. Portions of the drift have been washed and rolled, redistributed and deposited by torrents flowing from or under the glacier, or formed during its period of melting.

The farmers of Hamden are familiar with this boulder formation, and would be grateful for fewer opportunities of studying its peculiarities. Every time a field on the hills is broken up by the plough a new crop of bowlders is brought to the surface and must be removed. They have been utilized, as far as possible, for stone walls and buildings, but are much more abundant than useful. They are the chips and fragments left by the great glacial plough, and, as might be expected, vary in their nature and abundance in different localities; on some of the ridges trap rock is the prevailing material, and on others there is an equal or greater amount of hard red sandstone, of even grain, suitable for building purposes. Such rock is abundant on the Cherry Hill ridge, while on Mill Rock it is rare, most of the bowlders consisting of trap rock.

GLACIATION OF THE REGION.

The bowlders of Mill Rock, turned up from newly cleared land, give abundant evidence by their form and surfaces of having been pushed or shoved, or, at least, carried, forward in nearly straight lines while resting on the bed-rock. They exhibit two or three more or less flattened and rubbed surfaces, covered with striations and markings in the direction of the greatest length of the abraded surface, which markings are like those seen on the surface of the rocky floor along which the bowlders moved. The different surfaces show that the bowlders were occasionally turned over in their icy matrix, so as to present a new side to the floor. They were beyond doubt the gouges or graving points between the great mass of glacier ice above and the solid bed-rock along which the glacier moved, carrying these bowlders along with it. In short, these bowlders have the characteristic peculiarities of the bottom moraine, or ground moraine, of glaciers. They occur of all sizes, from pebbles to masses weighing tons, and are generally of trap rock, though quartz is common, and this quartz shows, in small

specimens, the many abraded sides better, generally, than the softer and more easily decomposed trap rock. Quartz, also, from its extreme brittleness, more frequently exhibits fracturing, due to movement along the floor under great pressure.

This ground moraine accumulation differs greatly from the water-worn and transported drift of torrents and river beds. The boulders are not rounded by rolling, they are shaped by rectilinear abrasion while firmly held in the plastic ice, as the glazier's diamond is held in its metallic bed.

The conditions of the rocky floor of this red sandstone valley were peculiarly favorable to the abundant supply of material for ground moraine. The comparatively soft shales and sandstones of the Trias offered little resistance to abrasion. Some of the included beds of conglomerate, holding ancient boulders of a peculiarly tough and hard quartz, must have supplied a large amount of abrading material, while the trap dikes, at intervals, supplied great blocks of rock, as the softer sandstones were cut away from under and around them. The heavy bedded intrusions of trap, such as those of Mt. Carmel, the Meriden Hills and East and West Rocks, with their columnar structure perpendicular to the bedding, were in the most favorable positions for being broken down, piece by piece, as the massive glacier pressed forward over their summits.

The general rounded contour of the sky-lines of the Blue Hills and Mt. Carmel are due to the abrading, rounding action of ice and rocks in the glacial period. The summit of the mountain shows glaciation distinctly. Broad exposed surfaces of rock are seen to be smoothed down and abraded just as upon East Rock and other bosses of trap rock. Glaciation is also found upon any hard and durable beds of sandstone, not only at Mt. Carmel, but in other parts of the town, especially where by the intrusion of trap the rock has been indurated. Fine examples are found upon Mill Rock.

Besides the ground moraine the glacier transported huge blocks of rock weighing, in some cases, 1,000 tons or more, and left them stranded on the hills many miles from their source. A mass of trap rock of this origin rests upon the sandstone on the farm of Mr. Davis, north of East Rock, others are found on the Cherry Hill ridge, and in various parts of the town. The great blocks of trap forming the Judge's cave, had a similar origin probably, having been transported, according to Professor Dana, from the Hanging Hills of Meriden, sixteen miles distant, or from some point in the Mt. Tom range, farther north.* They were probably in one block. It must have been carried across the intermediate valleys, and stranded at the height of 365 feet. It is now broken, but must have weighed, when entire, at least 1,000 tons.

RIVER DRIFT—TERRACE FORMATION.

Of still later origin than the glacial drift we have the deposits of river gravel and sand, the alluvions of ancient and existing streams, confined chiefly to the lower levels and the broad plains. The gravel, well rounded by attrition, is especially abundant along the Mill River valley, and is coincident in its extent with the terrace formation seen along the whole of the lower part of the valley, forming the plains of Hamden. These plains are of river, or estuary origin, and are formed of sandy and gravelly deposits, showing more or less stratification.

The level formation of Hamden plain is attributed, by Professor Dana, to the action of floods proceeding from the melting glaciers. The whole formation presents conclusive evidence of great floods of water. A line of depressions, many of them basin-shaped, indicating a river channel, extends from Mill River across to Beaver ponds and West River. Pot-holes on the borders of Mill River, excavated by flowing water, give evidence of great currents at high levels.

*American Journal of Science, III, XXVI, 347.

There is a fine example of a pot-hole, or "giant's kettle," in the hardened sandstone just above the dam at Whitneyville, on the south side of the main road and near Day's store. It is about four feet in diameter and ten feet deep. Others were found in excavating for the roadway, and are now filled up.

DEPOSITS OF SAND AND CLAY.

Good, sharp sand, suitable for making mortar with lime, is found at several points along the course of Mill River, under the upper layer of round gravel. At Whitneyville, just west of the pumping works on Armory street, the sand is very fine and free from pebbles, and forms a thick bed. Farther north, near the west end of the covered bridge, there is another sand bank much resorted to. This sand is much coarser than that at Whitneyville, and requires to be screened before using. Another bank is found near the top of the hill above the lake, on the cross road south of Henry Mather's place.

Pipe-clay, of light color, and great tenacity, is found in the deep valley of Wilmot Brook, between the West Rock range and the southern end of Cherry Hill ridge. This clay was extensively dug, some forty years ago, and moulded into brick at several yards along the valley. The clay differs greatly from the red clay of the Quinnipiac meadows, on the eastern border of the town, being stiffer to work, more plastic and less sandy. The boggy meadows in other parts of the town are believed to be underlaid by deposits of clay.

The borders of the Quinnipiac river are formed of deep deposits of fine, sandy alluvions, excellent for making brick. These deposits are stratified in thin layers, and appear to have been derived from the disintegration of the finer red shales of the red sandstone formation. The deposits have been extensively utilized for the manufacture of brick.

VARIETIES OF SOIL.

The soils within the town limits may be classified in four chief groups :

1. The gravelly loam of the hills, composed largely of the glacial drift, mixed in part with the materials from the decomposing sandstone beds, the clays and shales of the red sandstone formation. These are, in general, fertile, retentive of moisture and of fertilizers, without being stiff or cold.

2. The light, sandy and gravelly soils of the plains, comparatively free of clay; porous, dry, and requiring frequent enrichment.

3. The stiff, wet clay soils of the swampy meadows and lowlands; better for grass and for grazing than for crops.

4. The dark-colored soils of the trap rock ridges away from the drift deposits, consisting mostly of leaf mould, mostly humus, rich brown and nearly black in color, apparently derived from the slow decay of accumulations of leaves mixed with the fine earthy materials, proceeding from the weathering of the trap rock.

MINERAL DEPOSITS.

No valuable minerals have yet been found in the town in quantities sufficient to encourage extensive mining operations. Trap rock for building and paving purposes has been extensively quarried at Pine Rock and, to some extent at Mill Rock.

Native copper has been occasionally found in the drift gravel deposits of the hills of the town. A mass of copper, so found, is now preserved in the mineralogical cabinet of Yale University—Peabody Museum. A specimen from the vicinity of East Rock was presented to the Yale cabinet several years ago, by Mr. Eli Whitney Blake.

In Dr. Dwight's *Statistical Account* of New Haven, written in 1811, we find the statement, "copper is still known to exist in various places in the Hamden Hills, and attempts have been repeatedly made to sink shafts for the

purpose of obtaining the copper, but the business has never been prosecuted to effect." * * * *

Mrs. Doolittle relates that her father, Mr. Josiah Todd, of North Haven, when gathering fruit on the Hamden Hills, discovered a mass of native copper, weighing about 90 pounds, which he obtained and preserved. It was lying on the surface of a flat rock, at some places adhering to it, and even running into its crevices. He, with several other persons, afterwards sought for more, but as they, by their own confession, had superstitious fears respecting it, they probably did not make a very minute investigation, and no more was found. This mass passed through several hands, and was finally obtained by the son-in-law of the discoverer, a coppersmith, who considered it as very free from alloy, and used it in the course of his business. Unfortunately no part of this interesting natural production can now be obtained, nor is the precise place of its discovery known.

Recently Mr. J. H. Dickerman, who resides on the south of Mt. Carmel, in making a road up to the summit found a thin seam or vein of native copper in the trap rock. A few blasts threw out some small pieces of copper, from one-eighth to one-quarter of an inch thick, and two or three inches long. It is a tight seam, without vein-stone, and it is not sufficiently promising in its appearance to justify following it by mining. Such seams were probably the source of the masses found in the drift of the hills to the southward; the metal being broken out and transported by ice. Mr. Dickerman finds several excavations or pits at different places on the mountains, which were sunk, no doubt, in search of copper, and there are traditions that considerable copper has been taken from the mountain, and that it was coined into cents at the old New Haven mint. On Ridge Hill, just north of Mt. Carmel, there is a shaft and a tunnel, excavated in search of copper, by Mr. Charles Munson, of New Haven. According to Mr. A. W. Alling, of the Sheffield laboratory, some of the specimens of native copper obtained by Mr. Dickerman contain native silver in grains visible to the eye.

HISTORY OF MINING IN HAMDEN.

BY J. H. DICKERMAN.

TE may reasonably suppose that among the company who came with John Davenport and Theophilus Eaton to settle at New Haven, in 1638, were some adventurous spirits, whose first desire would be to explore the new domain for mineral wealth.

The Blue Hills (as Mt. Carmel was familiarly known until a recent date,) looming up, the highest land seen from the seacoast, must early have attracted the attention of seekers for treasure, and while little authentic history remains to tell by whom, or when, the first mines were opened, the excavations still show that work was done; where veins containing pure native copper, with a mixture of silver, were found. Yet tradition fails to tell who were the first workers.

The name of David Tallman is remembered by our ancestors about three generations earlier than the one present living, and it is known that he mined on what is called Ridge Hill, rising in the extreme north part of Hamden, east, and in close proximity to Mill River. It is also affirmed that he obtained considerable wealth from the Blue Hills, where excavations still show that much labor was expended. Whatever grants or leases that may have been held by him must be found on records kept previous to the organization of Hamden, as his name does not appear on the Hamden records.

From some unexplained cause, much interest must have been awakened in residents out of the State, in the supposed mineral wealth of our Mt. Carmel.

MINING LEASES.

On our land records are no less than twenty-one leases from owners of land on Mt. Carmel, granting to Charles Cleavland, of New York city, the right to all minerals, ores, etc., for considerations enumerated in the leases, usually a cash payment and a future share of net profits.

These leases were executed in 1849, and were to be inoperative if no work was done in five years. Nothing was accomplished under these leases. In 1864 leases were given by Sarah Blakeslee and sister, and by Merlin Bradley, to parties by name of Hubbard, of New York city, for which the said Hubbard paid in cash two hundred dollars for mining grants on a certain piece of land, where specimens of native copper had been obtained. This lease does not appear on the Hamden land record, but was executed to relapse in one year after work ceased at the mine. This vein is near an excavation supposed to have been made by David Tallman. Little work was done under the Hubbard lease, which suffered relapse. Mr. Charles Munson, of New Haven, in the same year, paid fifty dollars to Wm. D. Hall for a mining grant covering fifty acres of land, which appears on our land records, and also took leases from other owners of land in like manner, but no work ever seems to have been accomplished under them.

NATIVE COPPER.

Near the top of Mt. Carmel, during the present year of 1887, while making excavations for a road near a ledge of the trap rock, I discovered a vein containing specimens of pure native copper. Fortunately, leases are all invalid which have ever been granted on this property, but there is much doubt if sufficient quantity exists for successful mining. It does, however, corroborate the opinion of Mr. Munson that deposits of pure native copper exist in the mountain, and also supports the theory of Prof. Shepard in his report published in 1837, wherein he predicts that

this valley, extending north as far as Granby, will become celebrated for its mineral wealth. In this connection he says: "A mass of pure native copper, weighing about 90 pounds, was found in Hamden about fifty years ago. It was attached to a rock by which it had been connected by metallic veins."

Of the mines in Granby he says: "The precise date at which these mines were discovered is not known. Their charter of incorporation is one of the most ancient conferred in the colonies. It is dated 1709."

The ore taken from this mine is given as "vitreous copper, yielding about 12 per cent. of pure copper, and worth in the ore \$40 per ton, delivered at Swansea." "Compared with the yield of the Cornwall mines, England, 1815, which yielded but $7\frac{3}{16}$ per cent. copper from the ore, the mines in the colonies promised, at an early date, so much importance that commissioners were appointed by the King's bench as early as 1712, who opened a mine in Cheshire on land in the southeast part of the town, from which two ship loads of ore, it is reported, were sent to England."

TALLMAN'S MINE.

Prof. Shepard says of Tallman's mine in Hamden, on what is known as Ridge Hill, near Mt. Carmel: "Traces of vitreous copper exist, associated with green malachite, among the rubbish thrown out from an excavation about fifty feet deep. An adit was commenced at the foot of the hill, several hundred feet distant, and carried in above one hundred feet, with a view to strike this shaft." This report was published in 1837. Since then, Charles Munson, Esq., of New Haven, has prosecuted work to the accomplishment of the above view, having sunk the shaft to the depth of 150 feet, and continued the adit until it connected with it; a distance of several hundred feet. Not enough ore was found to pay for the expense of working. It would seem that by a review of the mining interests of this valley,

where so much labor and capital has been expended in the past two hundred years, that the only known deposits of pure native copper found have but lately been discovered, in at least two distinct veins on Mt. Carmel. Magnetic iron in nearly a pure state is also found here, and deposits of iron ore exist in Ridge Hill.

J. G. Percival says, in his report on the geology of the state: "Native copper is found in seams of the trap in the northeast part of Mt. Carmel." (Page 400.)

Prof. Shepard says of the Granby mine: "In 1830 the Phenix Mining company was organized, who purchased the property of the state. Several shipments of ore were made by way of the canal to New Haven."

Tradition reports that the ore taken from the Cheshire mine was shipped to England by way of Middletown on the Connecticut River, involving a land carriage of twenty miles. Prof. Shepard says of this mine: "It is owned by Mr. Aaron Bellamy, of Otsego, N. B., who is a descendant of the individual interested in the first exploration." The mine has been worked until a recent date, mostly for the sale of stock in mining offices of Boston and New York. Mr. Wm. King, who was late superintendent at the mine, informs me that about \$20,000 has been expended for machinery, and a shaft has been sunk about 600 feet deep."

FOREST TREES.

BY J. H. DICKERMAN.



BIRD'S eye view from the top of Carmel, of the twenty-six square miles within our town limits, reveals to one the fact that native forests still cover a large part of the soil. We may have cause for congratulation that so much of the surface is unsuited for tillage, that no deserts spread their arid sands within our borders, and wherever the plow has ceased its work, a few years has re-covered the land with its primeval growth. It is difficult to compute with exact certainty the increase of forest growth over fields that were in cultivation fifty, or more, years ago, but from the fact that large tracts of land on the eastern part of Carmel, and in other sections, now covered with forest growth, show evidence of cultivation, with remnants of walls and highways, along with ruins where once were homesteads, prove that while we celebrate our first centennial, farms where once were cheerful hearths are even now lost in oblivion.

GROWTH ON OLD FIELDS.

It is doubtless safe to estimate that at least one, and possibly two square miles, have regained forest growth on abandoned fields. We may also find evidence that by so doing a larger profit is returned to the owners of the soil, and the town revenues increased. We need Arbor day to add shade to our highways, and to plant new forests, as is found imperative on the western plains for the settler to find means of sustenance and protection. It has been said that the eastern lands would never have been settled if the more fertile western had first been occupied, but a more

thorough knowledge of the advantages of forest growth, and the great want entailed by the absence of it, would lead to the conclusion that without the belt of timber which covered the Atlantic coast, the first adventurers to our continent would have been unable to gain a foot-hold. With the first settlement of our town, wood, in different forms, was the chief article for sale or barter, and it is correct to say that it is still the great staple for revenue and employment.

MARKET AND VALUE.

There is nothing in our history to denote that to lumber, or timber alone, has at any time been given special care, but rather a combination of those interests with material for fence building, cord wood for the city market, charcoal, wood specially prepared for the burning of bricks, and last, but now not least, kindling wood, and home consumption, go to swell the aggregate to a total sum of no mean proportion. While the estimates given are based on the present yearly consumption and sale of forest products, it may be safe to infer that the sum received is an average of the yearly sales in different forms during much of the last century.

Prices have been at times much above the present market, but it is believed at no time much less than what is now obtained from a corresponding quality, and judging from the fact that the supply equals the demand, the yearly consumption in different forms may not have varied essentially from the present estimates.

Four water-power mills are devoted exclusively to sawing; one mill run by steam, and three or more worked by horse-power, reduce wood to stove lengths. From these data we find the present yearly consumption to be about 1,000 cords of kindling wood for New Haven market, and as many more cords for the city use, in five foot to eight foot lengths. The present prices obtained, delivered in the city, are five dollars a cord for soft woods, six dollars a cord for oak, and seven to eight dollars for hickory.

The brick yards receive from our limits yearly about 2,000 cords, at an average price, at the present date, of four dollars a cord, delivered at the yard. Of the amount which goes to market in the various forms of piles for wharfage, hickory and oak lumber and timber, railroad ties, fence posts and sawed rails, hickory poles for hoops, manufactured hoops, and all other forms, it is difficult to more than approximate the correct amount.

ESTIMATES OF CONSUMPTION.

This should also include trees sold for street shade, and something added for the yearly sale from nut-bearing trees, which together may represent a sum of \$3,000. Following the above estimate is the large amount of home consumption, in all forms, for bridges, buildings, fences and fuel.

The estimated capacity of 200 families' consumption, at ten cords each, and 500 families to consume but five cords, requires 4,500 cords yearly. This is all grown in our town, and what is sold to the consumer will average four dollars a cord. The farmer may think this a high price for his own fuel, but would pay that price if not of his own growth. Some farmers have given me their figures as varying from twenty to thirty cords consumed in single families during the year; that makes it reasonable to infer the above estimate is below, rather than above the amount consumed. Our factories also require 100 cords yearly. The footing from the above estimates exceeds \$40,000 annually received from our woodlands, including labor required to place it in market. If in the past 100 years \$4,000,000 have been received from our woodlands, our hills and valleys with their perpetual growth acquire increased evidence of value.

Some of our townsmen now living remember the price of wood sixty years ago, when twenty or more cords a day passed over one road to the city, and found ready market at eight dollars a cord. At that date there was a common opinion, often expressed, that the supply of wood would soon be exhausted.

At this day but little forest land is cleared, after removing a growth of twenty to forty years' standing, at an average yield of one cord per acre for each year of thrifty growth.

EXHAUSTION OF THE SOIL.

This growth of hickory wood will have absorbed from the soil seventy pounds of ash to each cord, yielding four pounds of potash; oak contains but twenty-five pounds ash, giving two pounds of potash; chestnut, eight pounds of ash, giving only one-third of a pound of potash per cord; birch, fifty-one pounds of ash, yielding four pounds of potash. This gives conclusive proof that forest growth exhausts the soil, to a great extent, of the nutriment required in cultivated crops, and that if forest land is cleared and put under cultivation, it is in no better condition than our tilled fields, without the aid of artificial manures.

It will be seen that chestnut draws much less from the soil than hard woods, while the growth is more rapid, and in many ways of equal or greater value. The white ash is a free grower, and if cared for to remove branches when growing, so as to give a trunk of clear lumber, is one of our most valuable woods. The white birch may also repay care, as its lumber is of the highest value when well grown, and the growth is rapid.

A white birch tree, which had grown on an abandoned field, was sawed at the root, where it measured eighteen inches in diameter, and gave forty feet in length sufficiently large for sawing into plank, which sold readily at four cents a foot. If an acre grew but 200 such trees in forty years, the value would be no less than \$1,200.

PROTECTION FROM LIGHTNING.

A tall tree near a building is an acknowledged protector against lightning. A white elm, which had attained the height of eighty feet in seventy years, received a heavy shock in July, 1869. The buildings near were doubtless

saved by the tree, but the tree succumbed to the stroke after a few years, and was removed. It was five feet in diameter at the base, and contained not less than five cords of wood. Many of the yearly growths were three-fourths of an inch in diameter, making one and a half inches a year on the two sides of the tree. This must have had a total weight of no less than ten tons, which had been acquired at an average rate of 142 pounds a year, but as the first years' growth were comparatively slow, and later growth more rapid, it is safe to infer that 500 pounds a year were added when it was spreading a circle of five feet diameter, with three-fourths inch yearly growth.

CULTIVATION OF FOREST TREES.

No attempt at cultivation of forest trees for timber growth has been made in this town, but investigation shows that it may be done with profit. Doubtless one of the best trees to grow is the common chestnut. The nuts may be preserved by packing in leaves, or dry sand, till spring, for planting in nursery rows, or plant in hills where the trees are to be grown.

One thousand trees on an acre will leave ample space between them for cultivation, which should be carefully given in the earlier growth. I find, by measure, the average growth of chestnut to be one-fourth inch yearly, in concentric layers, which represents one-half inch in diameter. The circles are added with remarkable uniformity of growth, showing great gain after the tree attains one foot or more in diameter. A plantation of chestnut trees would, in thirty to forty years, represent a value of more than one dollar a tree for railroad ties or other uses, which is \$1,000 an acre. Suppose the land worth twenty dollars at the time of planting, and that amount to double three times in forty years at interest, we have only \$160 against the \$1,000 in the tree cultivation. It may seem that 1,000 trees will crowd closely on one acre, but more than six feet will inter-

vene between each, and trees often attain large size which stand much closer.

It may be observed that in native forests large spaces of ground are unoccupied, and where a growth comes by sprouting from a stump they are much crowded in the cluster.

Hickory and chestnut trees have been transplanted with success by Whitney Elliott, Esq. He has also succeeded in grafting the hickory on its native stock, and now has a grafted tree which bears nuts of excellent quality.

It would appear, by investigation into the comparative growth and value of forest products, that we are overlooking one of our best sources of revenue by allowing so much land to lie idle, or reclothe itself in trees, when care will so much more rapidly and profitably enhance its value. We have now in the town about 7,000 acres of woodland, the yearly value of products of which equal, or exceed, any other single article of agricultural growth, and this woodland maintains itself without care, and under the most severe treatment and neglect. The next century may, and should, exhibit a change in the method of care of woodlands that will bring better returns.

The prominent and chief causes that militate against forest culture are, late frost in spring, depredations of "locusts," and fires.

It may be worthy of record that on the night of May 29th, 1884, the thermometer fell to twenty-six degrees. The new growth of forest trees, which had been rapid, was nearly all killed. Fruit trees, like apple, peach, cherry, etc., were uninjured. The injury to forest trees did not extend in altitude above 150 feet from the valleys.

"Locusts," the *cicada septemdecim*, deposit their eggs in young growing branches, causing them to break off and fall, thus retarding the development of the tree. But this pest comes extensively only once in seventeen years, but it inflicts considerable damage on growing timber. As with an untimely frost, there is no remedy, unless spraying with solution of poison would kill the pest.

Forest fires destroy more than other injuries combined, and annually become more frequent. They are extremely difficult to guard against, and are generally started by boys, in wanton mischief. Strict enforcement of the law against trespass may be the best preventive, as in most cases fires are originated by trespassers. The damage done to growing timber by fire is incalculable, and is far-reaching in its effects.

Woodlands serve the farmer's interests by protection from winds and storms to such an extent that it is impossible to estimate the benefit derived from this source. The autumn gathering of leaves is highly appreciated, where available, and if saved from an acre of forest, will doubtless equal the value of an acre of rye straw for the farmer's stables. This can be more readily done in a forest planted in regular lines than in native growth, where underbrush occupies much of the land, and obstructs the gathering.

Following is a list of most of the native varieties of trees found in our town limits.

NATIVE VARIETIES OF FOREST TREES.

Quercus alba, White Oak.
Q. rubra, Red Oak.
Q. ———, Rock Oak.
Q. ilicifolia, Scrub Oak.
Q. palustris, Pin Oak.
Fraxinus Americana, White Ash.
F. sambucifolia, Black Ash.
F. pubescens, Red Ash.
Populus alba, White Poplar.
Tilia Americana, Basswood.
Liriodendron Tulipifera, Tulip tree, or White wood.
Castanea vesca, Chestnut.
Juglans cinera, Butternut.
Carya alba, Hickory, Shag-bark.
C. microcarpa, Hickory, Small-fruited.
C. tomentosa, Hickory, White-heart.
C. porcina, Hickory, Pig-nut.
C. amara, Hickory, Bitter-nut.
Sassafras officinale, Sassafras.

Betula lenta, Black Birch.
B. lutea, Gray Birch.
B. alba, var. *populifolia*, White Birch.
Acer saccharinum, Sugar Maple.
A. rubrum, Soft Maple.
Nyssa multiflora, Pepperidge; Black Gum.
Abies Canadensis, Hemlock.
Platanus occidentalis, Buttonwood.
Morus alba, White Mulberry.
M. rubra, Red Mulberry.
Juniperus communis, Juniper.
Salix alba, White Willow.
S. livida, var. *occidentalis*.
S. discolor, Pussy Willow.
Corylus Americana, Hazel-nut.
Amelanchier Canadensis, Shad-berry.
Dirca palustris, Moose-wood.
Prunus serotina, Wild Cherry.
P. Virginiana, Choke Cherry.
Rhus typhina,
R. glabra,
R. copallina, } Sumach.
R. venenata, Poison Sumach.
R. Toxicodendron, Poison Ivy; "Mercury."
Cornus florida, Dogwood.
Hamamelis Virginica, Witch Hazel.
Ostrya Virginica, Iron wood; Hop Hornbeam.
Carpinus Americana, Blue Beech; Hornbeam.
Fagus ferruginea, American Beech.
Ulmus Americana, White Elm.
U. fulva, Red Elm.
Sambucus Canadensis, Elder.
S. pubens, Red Berried Elder.
Alnus serrulata, White Alder.

AGRICULTURE.

BY J. H. DICKERMAN.



IN 1766 a deed was executed by Ralph Isaacs to Jason Bradley, Jr., for thirty acres of land, for the consideration of forty pounds lawful money. Said land was a part of the farm now owned and occupied by Enos Dickerman, Esq., in the northwestern part of the town. A few years later a deed was given Russell Ives, of land at one dollar an acre.

About the year 1818 prices of farm produce were: For beef cattle \$4 a hundred weight; dressed hogs were worth \$12 per hundred weight; steers, one year old, were worth \$4 to \$6 a head; sheep about \$1 each. An extra good pair of four-year-old working cattle sold for \$100. Pigs six weeks old sold at six cents a pound, live weight.

Wheat sold at \$1 a bushel; rye \$1 a bushel; corn 75 cents. The price of a day's labor was 50 cents, or, including team, \$1 a day. Corn was raised for export and shipped to the West Indies.

CORN AND CORN MEAL.

The present site of the Mount Carmel Axle works at the date of 1825 was a grist mill, in possession of James Wyles, and contained a dry kiln for preparing corn meal for market. Lucius Ives, Esq., now a resident of the town, at the date named above, drove an ox team daily from the mill to New Haven, carrying a load of three hogsheads of meal, each weighing about 1,000 pounds.

Mr. Ives is of the opinion that this amount was the daily product of the mill for shipment, for about six months of the year, and was all, or nearly all, grown in the town

limits. Some, however, may have been brought to the mill from adjoining towns, as this was the only mill for this section with a dry kiln to prepare meal for foreign market. This has a greater significance when contrasted with the present custom in vogue of receiving large shipments of grain for home consumption.

Land was prepared for planting corn by forming a ridge with two furrows, leaving the width of one furrow between the rows, which was afterward plowed to the adjoining ridge. Corn was planted with the aid of a hoe, at distances of four feet, allowing three stalks to grow in each hill.

The expense in time of cultivating an acre was somewhat as given below:

For plowing one acre with ox team.....	1 day
One man to plant one acre.....	2 days
" " " hoe one acre, first hoeing.....	8 days
" " " " " second hoeing.....	2 days
" " " " " third hoeing.....	2 days
Three plowings for hoeing one acre, with team.....	1 day
Average product, forty bushels ears of corn.	
Cost of husking corn, one cent a bushel of ears.	

We find the cost of raising corn to have been from \$6 to \$10 an acre, for a crop of twenty bushels of corn.

Indian corn has always been a favorite and essential crop in Hamden. The yield per acre may be said to average forty bushels. In 1878 Mr. Geo. W. Bradley sent to the Paris Exposition a remarkably fine specimen of corn in the stalk and ear in one plant, root and stalk, bearing nineteen fully developed ears. This was grown from seed known as "Blunt's Prolific," obtained from A. E. Blunt of East Tennessee through Judge Fullerton of New York. It was much admired in the agricultural exhibit of the United States and received Honorable Mention from the judges.

Hay was not raised for a market crop, and rye straw had no commercial value. Potatoes were only grown for home use. Much of the cloth was of home manufacture. A mill for the preparation of cloth was then in existence near the site of the grist mill above located. Not much care seems

to have been given to enriching the land. Commercial fertilizers were unknown, and home made manures poorly appreciated. Forest lands were cleared and planted in corn, or sowed to rye; the same crops alternating so long as the yield proved remunerative.

HORSES AND CATTLE.

The first Grand list which is now with the town records is under date of 1844. One hundred and ninety-seven horses were assessed at \$6,045, which is an average value of \$30.68 cents each. Neat cattle, to the number of 1,208, were valued at \$20,036; being an average value of \$16.58 cents each; 658 sheep, valued at \$1 each.

The Grand list of 1885 gives: 606 horses, valued at \$36,950, average value nearly \$60 each; 1,124 neat cattle, valued at \$25,924, average value a little above \$22 each.

Sheep do not retain a separate list, but included with swine are valued at \$391, which is believed to be nearly all for swine, as scarcely a flock of sheep is known to be now in the town. The value of sheep now would be no less than \$2 each; which shows that we submit to a loss of more than \$1,300 in sheep husbandry. To offset this we legalize the keeping of 200 dogs, and receive therefrom \$1 each to the town treasury.

We find horses have largely increased in number, and nearly doubled in average value.

Little can be said of distinguished excellence in breeding neat cattle or horses, to the present date. Several herds of blooded cattle have, at different times, been established, but our farmers have failed to avail themselves of the benefits which might accrue by closer application to and study of its merits. Increased attention is at present given to rearing horses, the ultimate result of which can be described hereafter.

The number of cattle has decreased, and average value but slightly increased, while the long teams of oxen, numbering 120 yoke, which formerly graced the county fairs

from our town, are now unknown. The production of milk for the city market has increased the number of cows, and horses perform most of the work which fell to the lot of the patient ox. A change in tools and machines, with modes of labor which are better performed by horses, has no doubt hastened the change; for mowing machines, hay rakes and riding plows have taken the place of scythes, hand rakes and the hand plow. We may note that changes in mode of tilling the soil have come with new inventions for accomplishing the work.

To Hamden belongs the credit of the first residence of D. W. Shares, whose inventions brought radical changes in the cultivation of potatoes, and his coulter harrow has been the basis of most other improvements in that line. His machines under patents dated 1857, and his implements, have gone to all parts of the continent.

FERTILIZERS.

The town of Hamden may also claim what credit belongs to the first great advance in manufacturing fertilizing elements. The Menhaden fish were first successfully treated for the production of oil, and the remaining parts as a fertilizer, by Wm. D. Hall, in 1856, at the old location of the Quinnipiac company. What then went begging a market is now the recognized standard of sources of nitrogen. We may also mention that the heaviest vegetable growth from vines, which is on record, was a pumpkin, weighing 280 pounds, which with another product of 1,200 pounds from one vine, graced our first town fair, held in 1862, and from thence received from Orange Judd sweepstake premiums to the amount of \$40, at his exhibition held in New York.

The use of fertilizers has continued to increase during the past thirty years. It is estimated that not less than 500 tons a year are purchased in this town, which cost the farmers more than \$15,000. In addition to this we buy large quantities of corn and breadstuffs, and export noth-

ing. The census returns give hay as our largest production, which it places at upwards of 3,000 tons. We may also record great increase in fruit culture, and that the year of 1885 was of unparalleled abundance for apples. Twenty-five cents a bushel was paid at the railroad depot for shipping of good fruit, while apples were delivered at mills for four cents a bushel.

Apple pomace, when pressed without straw, has become of recognized value for feeding stock, superior to all roots except potatoes, which should ensure more care in preserving it, than has yet been bestowed.

VITICULTURE.

Grapes may become a leading industry, but this industry is yet in its infancy. Enough has been done to prove that our hillsides facing south are well adapted to vines, and that their culture can be made a success. Mildew and rot, which have destroyed so many vineyards south and west, have never seriously affected our hillsides, and we may reasonably expect immunity from their ravages.

TOBACCO CULTURE.

Tobacco was first cultivated by Jared Atwater about 1854. In 1856 or 1857, Orrin Crowley and J. H. Dickerman each raised about one acre of tobacco. The quality was good, and full average yield, but want of profit lay in the market. After casing and storing one year we sold it in New York at prices not exceeding ten cents a pound. Not much was grown till 1864. In that season Mr. J. J. Webb planted four acres and built a barn for drying. Wm. Dickerman's crop, raised that season, required the construction of a barn fifty feet long. Hamden planters always missed a good market. Buyers from Hartford county seldom came among them. Twenty cents a pound was about the best price obtained, and the crop seldom sold so high. The last crop was raised about 1870. Doubtless the cost of

growing and handling was much in excess of proceeds. The proximity to sea water causes the leaf to thicken, and white vein usually lessened the value of the leaf. But the great want was buyers to handle and cure the crop. There will be no inducement at present for a revival of the culture of tobacco.

PEACH CULTURE.

Peaches flourished in Hamden until about 1850. The "yellows" attacked trees which came from nurseries, and no measures were instituted to overcome the disease. Peaches thenceforward were mostly known only in remembrance of the past. Some favored localities, prominent among them is the high ridge west of Hamden Plains, and extending north through West Woods, have continued to produce peaches nearly every year. Some farmers have realized sales which would give credit to orchards in the peninsula. Mr. Geo. Northrop states he received \$108 for a single load of peaches which he marketed from the farm of Julius Gorham in 1862. The load contained twenty-five crates and twenty-five baskets. Some of that season's crop weighed twelve ounces each.

Doubtless the greatest influence retarding peach growth, has been high prices for other products which were more certain in their yield. Low prices in other commodities have again directed attention to peach raising, as the demand is always large. When we know how many failures occur in the Delaware section of peach growing, and the care necessary there to insure success, we may feel much confidence here if we know and make use of the needed conditions. Native peaches have sold this season for \$2⁵⁰/₁₀₀ a basket to be resold, with the offer of the same price daily, for twenty baskets of fruit. Such are the capabilities of our town for growing peaches. In 1855 Mr. Wm. Church furnished trees for many farmers in this town on condition that Mr. Church should receive one-half the crop for nine years. It is thought he furnished ten thousand or more

trees. The year 1860 showed a large crop, estimated equal to one hundred baskets to the acre. The requisite fertilizing elements for the peach may be found in hard wood ashes, applied liberally to the land. Particular care is required to keep out the borer or worm from the tree. Salt strewn around the tree at the roots and just below the soil, is said to be an excellent preventive and was used with excellent results at Cherry Hill by Mrs. M. E. Mix forty years ago.

DAIRY.

Griswold I. Gilbert, Esq., reports that in 1840 he was milking seventy quarts milk a day, which sold at the farm for three cents a quart during the summer, and was delivered in the city at five cents; six cents was the winter price at retail. William Bradley was earlier in the business, commencing probably about 1830, but the daily average of milk from the town in 1840 did not exceed four hundred quarts, supplied by a few farmers near the city.

The present year of 1886, Mr. W. Benham gives a list of twenty-six different parties carrying milk to the city, aggregating very nearly six thousand quarts daily, at a retail price of six cents in summer to eight cents in winter, with the wholesale price at the farm at two and a half cents to three and a half cents a quart, embracing the whole town for the supply.

A new industry has this year been begun in New Haven to separate cream by the centrifugal process. The company sell their butter at thirty-six cents retail price, and pay for milk three cents and four cents a quart summer and winter. The milk delivered to them is subject to inspection and must contain twelve and one-half per cent. solids. Milk which does not bear this test is rejected.

No particular breed of cows is retained by milkmen. Those in use are mostly from native cattle bred to grades of Shorthorn or Holstein stock.

CHERRY AND MULBERRY TREES.

In 1775 Benj. Douglass, by profession a lawyer, planted an orchard of sixty-four cherry trees just outside of the New Haven town limits near East Rock, all of grafted trees. This was upon the red-rock ridge overlooking the Quinnipiac valley on the farm known for a long time as the Hubbard farm.

The people of the town participated to some extent in the celebrated *morus multicaulis* excitement. Barber says that in 1836 upwards of one hundred acres of land were under preparation for raising mulberry trees at a point about three miles north of New Haven. The editor of this history well remembers helping to pick mulberry leaves at that date to feed silk worms reared by his grandmother, Mrs. Mary E. Mix, in the garret of the old house at Cherry Hill. A goodly supply of large yellow cocoons resulted, from which silk of excellent quality was reeled and spun. The worms thrived upon the leaves of the ordinary white mulberry. Considerable silk was also made on the north slope of Mill Rock on the farm now owned by Mr. C. P. Augur. Reference is made in another part of this volume to the earlier efforts to produce silk.

PUBLIC WORKS.

CHESHIRE ROAD.



THE old Cheshire road or "Long Lane," as a part of it seems to have been called in early times, has always been the principal thoroughfare of Hamden. It was laid out in 1686 and again in 1722, and is the prolongation of Dixwell avenue of New Haven, leading out of Broadway. It follows the best route for a road, being upon the natural and easy grade of the New Haven and Hamden plain, thus avoiding the hills and depressions of the other roads leading northward. The earliest roadway in this direction, from the New Haven center, appears to have been the "way to the Plains," and it is supposed to have first been in the neighborhood of the present Canal street or Ashmun street, of New Haven. The following extracts from the Proprietors' Records of New Haven, will show the successive steps taken to secure a road northward over the plain, and to Farmington and Cheshire.

ROAD OR WAY TO THE PLAINS.

In 1641 The General Court of the Colony ordered :

"That Mr. Robt. Newman, Mr. Francis Newman, Thomas Mounson, and Adam Nichols shall view the com^a [common] way to the Plains and afterwards it is to be ordered so as may be most comodious for the publique good."

Before the town of Cheshire was organized the road appears to have been known as the "Farmington Road."

FARMINGTON ROAD.

Under the date of December, 1686, we read in the Records:

"The road or way to Farmington begins at the Common near the house of Jno. Johnson and continues where it is leading to the place called Shepherd's Plain and so on to end of West woods and so forward to end of our bounds and to be six rods wide."

Again, we find the following report of the layout:

February 19, 1721-22. "We whose names are under-written according to an act of the town aforesaid have done according to the best of our discretion in bounding of and marking off Farmington Road through New Haven bounds, beginning upon the western line of Whitehead's lot extending six rods over to Gilbert's north line, then a station between Whitehead's lot and Sackett's set off six rods west, then from Sackett's north bounds west six rods from thence in a direct course near where the path now is up to the Steps, from thence where the path now is until it is north of Lt. Miles's lot, then easterly extending over the river, then strikes upon Miles's north line and is northward then until it meets with Wallingford highway by Daniel Andrews' farm." *

This route was that which had the fewest natural obstacles and was comparatively free from the bowlders which are found in all the new roads on the hills. It required but little working as the soil was, for the greater part of the distance in the town, sandy and gravelly.

This Cheshire road until the completion of the Hartford and New Haven turnpike was the main road out of New Haven leading to Hartford and Boston. Long before Mr. Ives, of Mt. Carmel, was engaged in the business of freight-ing goods to Boston, using presumably, a part of the Chesh-

* See page 844, of copy of Proprietors' Record, 1684-1765.

ire road, an exclusive grant had been given, in 1714, of the business of freighting for a period of seven years. This grant, made by the General Court of the Colony, was in the following terms: "This Assembly do grant to Captain John Munson, of New Haven, that in consideration he hath first been at the cost and charge to set up a wagon to pass and transport passengers and goods between Hartford and New Haven which may be of great benefit and advantage to the Colony in general; that he, said John Munson, shall have and enjoy to him, his executors, administrators, and assigns, the sole and only privilege of transporting persons and goods between the towns aforesaid, during the space of seven years next coming; provided that it shall and may be lawful for any person to transport his own goods or any of his family in his own wagon, anything in this grant to the contrary hereof notwithstanding."

He was required to make monthly trips, starting on the first Monday of every month except December, January, February and March, and to drive with all convenient despatch to Hartford and to return to New Haven in the same week, "bad weather and extraordinary casualties excepted, on penalty of ten shillings each neglect."

HARTFORD AND NEW HAVEN TURNPIKE.

The Hartford and New Haven Turnpike Company was incorporated in 1798. The road extended from Grove street in New Haven, along Whitney avenue, and crossed the lake just above the dam at Whitneyville by the same covered truss bridge which now spans the channel of the narrow part of the lake higher up, and was thence extended northward through the town, being the same main road now used from the east side of Whitney Lake to Centerville and beyond. It is practically the prolongation of Whitney avenue, though its course at Whitneyville has of necessity been much changed in consequence of raising the height of the water of the lake. The grade of the old turnpike can

still be seen on the north shore of the lake a little above the dam.

The layout and construction of this turnpike road was opposed by the town, and in the records for the year 1798, we find the following :

Voted: That all reasonable and probable means by way of remonstrance before the General Assembly, to be holden at Hartford, in October next, be made use of to prevent the road lately laid out from New Haven to Hartford, so far as the same respects this town.

Voted: That Mr. Josiah Root be Agent for this town to oppose the aforesaid road, as it relates to this town, with or without counsel, as he shall judge most conducive to the benefit and general good of the same.

CHESHIRE TURNPIKE COMPANY.

The Cheshire Turnpike Company was chartered in 1800. This road connected with the New Haven and Hartford turnpike at Whitneyville.

The town records show that this turnpike also became very unpopular with the town people, as may be seen from the following extracts:

August, 1803. At a special town meeting legally warned and convened on account of the Cheshire turnpike gate near Mt. Carmel meeting house in Sd Hamden, Mr. Alvan Bradley was chosen moderator.

Voted: The Selectmen be directed to move the fence of the old Cheshire road near the above said turnpike gate, all except the four rods laid out for the turnpike.

Voted: To rescind the above vote.

Voted: That the Selectmen are directed to call on the president and directors of the Cheshire Turnpike Company and request them to remove the turnpike gate, within ten days, off from the old road, if not the town has ordered the

Selectmen to remove all but the four rods that the Assembly granted for the said turnpike.

Aug. 15.—*Voted*: That the Selectmen of the town of Hamden are directed to proceed immediately and clear and keep cleared the old road of the fence erected by the Cheshire Turnpike Company near Hezekiah Dickerman's, so far as the said fence is not in the four rods granted to said turnpike company by the Assembly and the said Selectmen are hereby indemnified in their said doings and the vote passed the last town meeting respecting the said fence is hereby rescinded and annulled.

Sept. 19.—*Voted*: That a petition be presented to the General Assembly praying a removal of the Cheshire turnpike gate established in this town so that the inhabitants can have the use of their old roads free of toll, or relief in some other manner, and the Selectmen are hereby directed to draw said petition and to subscribe it in the name and behalf of the town.

FARMINGTON CANAL COMPANY.*

This company was chartered in 1822, but the canal was not commenced until 1825, and was not completed until 1830. The subscription books were opened in New Haven in 1823, and the first meeting of stockholders was held in July. It was estimated that the canal could be made for \$420,698.88, exclusive of land damages. A survey of the route was made by Judge Benjamin Wright, of New York, and his son Henry Wright.

The construction was begun in 1825, under the superintendence of James Hillhouse, with Davis Hurd as chief engineer, and Henry Farnam as assistant engineer.

*This notice is compiled from the pamphlet entitled:

"An Account of the Farmington Canal Company; of the Hampshire and Hampden Canal Company and of the New Haven and Northampton Company till the Suspension of its Canals in 1847." 8vo., pp. 24; New Haven, 1850.

In May, 1826, the stockholders voted to blend the stock of the company with that of the Hampshire and Hampden Canal company.

After a period of financial embarrassment the company was enabled, in 1832, to prosecute its work by a subscription of \$100,000 made to its capital stock by the City Bank of New Haven, the bank having received its charter on the condition of making this subscription. In the next year, 1833, the company obtained a loan of \$60,000 from individuals in New Haven, Northampton and other places on the line of the canal, and New York city. Mr. Henry Farnam was the chief engineer, and the canal was finished to the Connecticut River in 1835.

But misfortune followed the enterprise, and extraordinary efforts were required to keep the canal in operation. At a meeting held in New Haven, October 27, 1835, a plan of reorganization was adopted, and a new company was formed, and a charter of incorporation was obtained from the states of Connecticut and Massachusetts. This new company was known as the

NEW HAVEN AND NORTHAMPTON COMPANY.

The whole amount of new capital paid in was \$216,112.39, of which \$145,927.47 was paid with debts, leaving a cash capital of \$120,184.92. The canal was navigated from tide-water to the Connecticut River at Northampton for boats carrying from twenty to twenty-five tons burden through the business season of the years 1836, 1837 and 1838. The company soon spent its capital and was involved in debt. The amount expended by the company from 1836 to January 1840 in taking possession of the canals and managing and keeping them in repair, and for all disbursements for the canals was \$181,367.67. The receipts for tolls and from all other sources was \$39,199.62. This makes a loss of \$142,187.45, from which deduct the cash capital, \$120,184.92, and there remained a debt against the company of \$22,002.53. To the loss suffered by the two original com-

panies of \$1,039,041.62 we must add the loss suffered by the New Haven and Northampton company of \$238,114.92, making a total of \$1,377,156.53 lost up to the year 1840.

From 1840 to 1846 the canal was operated by the aid of a yearly payment from the city of New Haven, for the use of the water, and by the proceeds of assessments upon the shareholders to meet the deficiency. The cost of operating and ordinary repairs was met by the receipts; but the extraordinary repairs were very heavy, and in 1843 a violent flood damaged the works to the extent of \$20,000. In 1845 the attention of the owners was turned towards building a railroad to take the place of the canal. At the suggestion of the superintendent, Mr. Henry Farnam, a survey was made by Mr. Alexander C. Twining. At a meeting of stockholders in February, 1846, it was voted that the directors be authorized and directed to petition the Legislature for power to build a railroad to take the place of their canal.

A charter was granted for this purpose by the Legislature. Work was commenced January, 1847, and the road was opened to Plainville January 18, 1848. The canal was kept open for navigation throughout the season, and until the railroad was ready to take its place.

Although the business had increased from the year 1840 onward the extraordinary expenses were so heavy that the loss in operating and repairing amounted to \$101,268.56 which, added to the total loss up to 1840, makes a total of \$1,478,425.10.

But it is fair to subtract from this the value of the canal to the New Haven and Northampton company in the construction of the railroad, which in lessening the damages for land, the cost of grading, and the expense of transportation, may be estimated at about \$186,000. The value of the canal property in New Haven was also estimated at \$208,000.

The route of the canal was through the central part of the town, near to the old Cheshire road. It presented a gay appearance about the year 1838, when a new

line of fast packet boats was put on, expressly fitted up for the accommodation of passengers. These boats were gaudily painted, and had knife-like projections at the prow apparently to cut the tow lines of the slow-going freight boats. The trip to Northampton was made in twenty-six hours.

The "old canal" soon became well stocked with small fishes, and was much resorted to by the boys of that period for "roaches," "shiners," cat fish and eels, these with the grass from the towpath appear to have been the chief dividends to stockholders. The canal was destined to be superseded by a railway.

NEW HAVEN AND NORTHAMPTON RAILROAD.

In 1846 an act was passed to incorporate the Farmington Canal railroad, and in 1847 trains were running through Hamden from New Haven to Cheshire, following the towpath of the old canal, and so near to the traveled road and dwellings as to be dangerous, and a nuisance to the town.

Through the efforts of some of the public spirited and energetic residents, the route of the road was changed so as to avoid the highway as much as possible, by locating the road further east, at a great expense to the company and a cost of \$14,000 to the town. This enabled the company to secure a much more direct route into the city and a more uniform favorable grade, at the same time avoiding many road crossings on a level with the track.

CONSOLIDATED ROAD TO HARTFORD AND SPRINGFIELD.

The Legislature was memorialized in 1833 by James Brewster and others for a railroad from New Haven to Hartford, and in 1836 the road had been located for the first eighteen miles, to Meriden. The route for a few miles skirts the southeastern borders of the town, and is now a part of the route from New York to Springfield and Boston.

The New York and New Haven railroad was incorporated in 1844. The preliminary surveys were made by A. C. Twining. The first stockholders held a meeting May 19, 1846. The road was opened for travel January 1, 1849, on a single track. Consolidated with the New Haven and Hartford road in 1872.

NEW HAVEN WATER COMPANY.

The main supply of water for the city of New Haven is obtained from Hamden. The great storage reservoir, Whitney Lake, occupies the valley of Mill River, north of Mill Rock, for two miles or more. The stream has a water shed of over fifty-six square miles and affords a daily amount the year round of 120,000,000 gallons. One-tenth part of this amount was taken as the basis of calculation of the supply of the water works, or 12,000,000 gallons, which is considered the extreme least flow of the river.

According to the report of the engineer, Mr. A. C. Twining, the least quantity of water flowing in Mill River in twenty-four hours is eleven and two-thirds millions of gallons, and of the Quinnipiac twenty-two and one-third millions of gallons.

The New Haven Water company was incorporated in 1849, but the city of New Haven having declined to undertake the construction of the works, the charter was assigned to Mr. Eli Whitney who, foreseeing the great importance of a liberal supply of pure water to the health and prosperity of the city, interested himself greatly in the enterprise, and reorganizing the company took a contract with Charles McClellan & Son for the construction of the dam and works. The work was commenced in 1860.

The company commenced pumping water into the reservoir on the 2d of December, 1861, and it was introduced into the distributing mains, January 1, 1862.

WHITNEY DAM.

The heaviest part of this undertaking was the construction of the dam to retain the water. It was decided to construct it of stone, using the trap rock of the adjoining bluffs of the East Rock group and Mill Rock. The site chosen is at the narrow gorge between these two elevations where formerly the old time grist mill of colonial days stood, and where Mr. Whitney, Sr., built afterwards the armory.

The foundation of the dam is the top of the nearly vertical trap-dyke which here trends nearly east and west and forms the connection between Mill Rock and Whitney Peak, the spur of East Rock. It is the same dyke that forms the crest of Mill Rock and has always acted as a natural barrier to the flow of Mill River, causing falls at the crossing. The sandstone above and below the dyke being softer has worn away faster than the trap, thus leaving the trap rock as the highest portion and so as to form a natural dam for the water. This natural dam and the water power it afforded, with probably but little work, determined the site of Todd's Grist Mill.

When the site was acquired by Mr. Eli Whitney in 1798 the dam was built of logs and was about six feet high.

The dimensions of the various parts of the dam are as follows:

Overflow Portion.—Length, 150 feet; height, 30 feet in 1863, now (1887), 34 feet 11 inches; thickness at top, $11\frac{2}{100}$ feet; at base, $34\frac{12}{100}$; batter on face, 2 in 12; at back, 7 in 12.

East Wing.—Height, 35 feet; thickness at top, $8\frac{5}{100}$; at base, $34\frac{3}{100}$; batter on face, 2 in 12; on back, 7 in 12.

Main Dam.—Height, $38\frac{5}{100}$ feet; thickness at top, $3\frac{2}{100}$ to 6 feet; at base, $25\frac{10}{100}$; batter on face, 3 in 12; on back, 4 in 12.

West Wing.—Height, 5 feet; thickness at top, 3 feet; at base, 6 feet. The total length of dam is 500 feet.

The total cubic contents of the dam are about 250,000 cubic feet.

In addition to the structure of stone there is a backing of gravel and sand 60 feet thick at the base and sloping to the top of the dam. This gravel makes the total thickness of the dam at top about 20 feet, and its base at the deepest part of the river about 100 feet.

The face and back of the stone work of the dam are laid up with the largest blocks of stone in cement mortar. A layer of concrete on the back, eight inches thick, extends from the rock foundation up to the water line.

Masses of rock from two to four feet long and weighing as much as four or five tons were used for the outer walls. These masses were raised and placed by horse-power derricks. The roughly laid back slope is finished with a layer of concrete rammed down tightly between the rock work and a facing or backing, on the water side of the dam, formed of plank laid upon and spiked to timbers. There is thus in this dam, first a layer of planks, next a layer of concrete, and then the heavy stone work. The whole is backed with gravel and sand and soil from the adjoining banks.

The top of the dam is faced with four-inch chestnut plank laid on a slope down stream, and projecting beyond the face of the stone work of the dam. This planking, or apron, serves to throw the overflow water some distance beyond the base of the stone work of the dam and upon solid rock. It is thrown so far clear of the dam that no jarring vibration of the air is produced by the fall, a vibration often formed by the overflow of dams and the source of much annoyance to residents, even at the distance of several miles. Formerly, when the dam was only six feet high, there was considerable vibration, and the sound of the fall could often be heard in New Haven. The vibration communicated to the buildings of the manufactory was at times so great as to seriously interfere with the polishing operations on the firearms.

At the Derby dam, for example, which is twenty-one feet high, with a perpendicular fall of water, the roaring noise is very great, and the vibration is so severe as to shake the buildings and to detach plastering from walls.

The lower portion of the Whitney dam is laid in cement. The whole face was re-pointed a few years ago, and is in good condition.

As more or less water would penetrate to the core of the stone work it was necessary to leave channels along the foundation for its escape. Holes were therefore left in the stone work at intervals at the base of the face through which the water behind the front wall could escape freely; thus preventing its accumulation and any injury that might otherwise result from freezing and expansion in the winter; concrete and cement making the dam water-tight on the upper side.

The contract price for the construction of the water works, including the dam and reservoir, and eighteen miles of main distributing pipe was \$350,000. The price of labor at that time was ninety-five cents per day; masons, \$1.75; cost of laying the stone, dry, six cents per foot; it would now probably cost twenty cents or more. The dam at the present time would not cost less than \$150,000.

The pipe chamber near the west wing of the dam is built of hydraulic masonry, and contains the gate screens and pipe, four feet in diameter, through which the water is conveyed to the pump house. The elevation of this pipe above the base of the dam is seventeen feet, leaving thirteen feet of water available to the uses of the company. The storage capacity of the distributing reservoir on Sachem's Hill is 10,000,000 gallons. The pumps have a capacity of 6,000,000 gallons daily.

The erection of this dam and the greatly increased area of land overflowed in consequence, necessitated great changes in the direction of the roads near the old mill pond. Twenty buildings and three bridges had to be removed. Farms and gardens were submerged, roads were

covered with water, and mill sites were destroyed. A reconstruction of all that part of the town followed. The covered bridge, which had for nearly forty years spanned the mill pond in the line of the old Hartford turnpike, was moved entire from its abutments, under the direction of Mr. Eli Whitney, and taken a quarter of a mile higher up the stream and placed upon new abutments in the place it now occupies.

THE COVERED BRIDGE.

As this bridge is one of the oldest of its kind in the United States, if not the *first* truss bridge, a brief description of it, and of its removal, will be given.

It was designed and constructed about the year 1823, by Ithiel Town, architect and engineer. It is built of oak timbers, and is 100 feet in span and about 114 feet in total length; breadth, $13\frac{1}{2}$ feet; height, 13 feet 9 inches. The truss is formed of 3 inch oak plank, $8\frac{1}{2}$ to 9 inches wide, crossing each other at an angle of 80° and about four feet apart, center to center, and pinned at the crossings by two $2\frac{1}{4}$ inch oak pins, wedged at each end. These truss timbers 42 in number on each side, or 84 in all, are held at the ends, top and bottom, by stringers or plates, one on each side, measuring $12 \times 5\frac{1}{2}$ inches. The different lengths of timber are joined by long tenon joints securely pinned. The roof is supported by strong rafters, to which angle braces are pinned, and extend down upon the side of the truss.

There is no framing of the truss timber, and but little in any part of the structure, the whole strength of the timber being utilized. The bridge would be equally strong if turned up side down.

REMOVAL OF THE COVERED BRIDGE.

The removal of this long and heavy bridge was thought by the engineers to be such a difficult and costly undertaking that it was discouraged, but Mr. Eli Whitney un-

dertook it, and removed the bridge whole to its present position at a cost of only \$250. Cribs of chestnut posts were first built up under the bridge. Upon these, long sills were laid; rollers were put between them and the sills of the bridge, and the structure was then rolled off upon the road, and so on to the new place where the abutments had already been built for its reception. Here the bridge was rolled over the gap for one-third of its length, and by the aid of crib work and timbers was finally placed in position uninjured, and has since continued in good condition.

The timbers appear to be as sound and firm as they ever were, and with proper care of the foundations and roof, to prevent decay, the bridge may last for half a century more.

WINTERGREEN LAKE WATER WORKS.

Another source of supply of water for the city was found in the small pond known as Wintergreen Lake, on the northeast slope of the West Rock range, at an elevation of about 240 feet above tide water. A dam was built there in 1863, by the late John Osborn. The reservoir covers over 60 acres.

In 1877 it was purchased by the New Haven Water company, and has head sufficient to supply the houses along Prospect street.

In 1864 a charter for water works for Centerville was obtained by the late C. W. Everest.

MT. CARMEL WATER COMPANY.

The Mt. Carmel Water Company was chartered and commenced operations in 1878, with a capital of \$5,000. The supply of water at present is obtained from natural springs on the surrounding hills and from wind-mill power. For future emergency the company holds the title of land and water heads in various localities, among which the Wolcott Falls, an ancient saw mill seat in the western part of the town, in connection with others, are depended upon for

furnishing Centerville and Dixwell avenue on the Hamden plains, also the hill country around New Haven beyond the reach of the New Haven Water works in elevation. Also, the railroad station at Mt. Carmel and adjacent houses. Such a development opens room for a profitable increase of the company's capital stock. The company are in possession of maps showing the location and elevation of all the water sources in New Haven vicinity, besides a descriptive map of the present lay-out of the works. The present officers consist of James Ives, president, and Allen D. Osborn, secretary, treasurer and surveyor, with Lyman H. Bassett and Samuel J. Hayes, as directors.

EAST ROCK PARK.

The beautiful public park laid out upon East Rock by the city of New Haven and many of its public spirited citizens, is partly within the limits of the town, and adds greatly to the attractions of the place. The following descriptive passages are taken from the report to the commissioners upon a lay-out or plan for the park, by Donald G. Mitchell, L.L.D., to whom the lay-out of the drives, and general design of the park was entrusted :

"The area proposed for the park is a crescent-shaped body of land, two miles north by east from the Green, with its convex side toward the city, its prominent feature being a great up-lift of basaltic cliff, which, in its highest part, reaches an elevation of 360 feet, and shows a precipitous face from 70 to 100 feet in height, by some 1,800 feet in length. This great line of precipice is convex in shape, and fronts the city; it is fringed with a dwarf growth of wood, and the rocky debris at its foot slopes to the banks of Mill River, which, with its narrow hem of salt meadow, skirts the rock upon the south and west.

"East of the southernmost end of the main cliff, and separated from it by a wooded gorge, rises a lesser basaltic hill, known as Indian Head, which repeats in miniature the features of its larger neighbor, and has only some 60

feet less of elevation. Thence the rocky frame work of the park lands tends southeasterly and ends in Snake Rock, where trap and red sandstone both appear. This last cliff, some 200 feet in height, forms the southern horn of the crescent shape to which I have likened the general area.

"North of East Rock proper there is another dip of the land, though not so gorge like as at the southern end, yet showing a very picturesque sylvan glade, which is flanked by heavy forest growth on the north. This forest growth covers the southern slope of a new transverse line of rocky ridge, whose eastern extremity is known as Whitney Peak, and which at the west ends in a bold, rocky buttress of cliff at the Whitney Dam. North of this barrier again, easy slopes of wooded and tilled land carry the park area to the shores of the lake, and to the so-called Ridge Road, which forms for a considerable distance the northern boundary.

QUINNIPIAC ENTRANCE.

"The eastern border is a curved line, nearly parallel with the North Haven road, and some 600 or 700 feet distant therefrom, for more than half its length—following generally the bottom of the slope which the hill land makes in its descent to the level of the Quinnipiac Valley, and touching State street at what I have designated as the Quinnipiac entrance. The eastern slope is seamed with several rocky ravines, heavily wooded, which receive the flow of a few scattered springs upon the flank of the hill.

"A fair forest growth covers at least four-fifths of the area—stunted and dwarfed where the rock comes near to the surface, and heavy and luxuriant where the soil is deep.

"The bold picturesqueness of the site does not invite the niceties of conventional gardening. Beside those ragged reaches of precipice, and the skirting forest, little patches of garden craft would be impertinencies. I have therefore sought mainly, in the plan submitted, to make access easy and enjoyable, not only to the more commanding localities, but to the retired nooks and recesses of the range, which are now comparatively little known.

"I have introduced a few small dashes of color—whether by flowering shrubs or dwarf evergreens—grudgingly, and only where some quiet bit of sheltered greensward seemed to invite the treatment. In all the work suggested I have tried to subordinate the rocks and roads and plantings to the grander features of interest, under the conviction that the things best worth seeing there will always be the rocks and woods and views as nature has shaped them.

HAMDEN RIDGE ENTRANCE.

"I have suggested some modifications of the boundary line of the park. In two instances to facilitate entrance, as at the joining of Rock and Hemlock streets, which I have designated as Terrace entrance; and again at a point upon the Ridge road. This latter change of border line, indicated upon the diagram, will explain itself in connection with the contours, and will be demanded to secure an easy grade whenever an entrance from the northeast shall be desired. A third modification of more importance is that proposing a longer line of lake shore, which, if adopted, will increase very largely the apparent area—virtually bring the whole lower reach of Lake Whitney into the park territory, and forbid any possible future occupancy of the annex suggested, which would work detriment to the interests of the park.

GATE OF THE TWO TOWNS.

"The old site of Rock Lane Bridge is an extremely picturesque point, since it is here that the wooded highlands of the west bank approach most nearly to the mass of the rock. I therefore strongly urge for this crossing a bridge of picturesque character. Such an one would show charmingly from the Orange street entrance, and from the walk along the whole bend of shore lying between. Two or three stone arches, as indicated in a sketch submitted, would be best. If costs should forbid this, I have given another "hint" for a heavy timber structure of the old

Colonial (New England) type, which would harmonize admirably with the scene; but I cannot forbear thinking that a "railroad truss" at this point, though perhaps the cheapest, will mar very much one of the most rural and park-like scenes which will be subject to your control.

"Still another, and subordinate entrance from Whitney avenue, is figured upon the plan, from a point near the Hamden line. This "Gate of the two Towns" connects by even grade with the approaches last spoken of; it also gives entrance to that foot path diverging from the drive, which hereabout, as the map will show, skirts the bend in the river, by a raised embankment which may be fringed with a growth of willows, and crossing the river by a simple rustic foot bridge, will connect with the trail of walks and drives upon the east bank.

"Another bridge way, for foot passengers only, I have figured as traversing the wasteway of the Whitneyville Dam. A light suspension bridge here (if consent of proprietors could be gained to that end) would be charmingly picturesque, and would enable those taking advantage of the Whitneyville cars, to plunge easiest and quickest into the shady recesses of the park.

"A "Lake Entrance" is suggested from the road beyond the covered bridge, at a point near the old Hartford turnpike, and still another from the country road crossing the hill eastward, near to a point marked by trees and a spring, which I have called the Beech Spring entrance. These latter approachways would hardly be needed until the park has reached a much later stage of development, and the same is true of the northeastern entrance already alluded to in connection with certain modifications of the park borders.

"The entrance from State street, now in service for the driveway opened a year since to Indian Head, is embraced in the scheme of roads figured upon the plan. This will always be a favorite entrance for those living east of Mill River, and the wooded dell through which approach here is made, will at some future day permit and invite very piquant garden treatment.

MANUFACTURING INDUSTRY.

INTRODUCTORY NOTICE.



SKETCH of the manufacturing industry of the town of Hamden requires an introductory notice of the progress of manufacturing in New Haven before the separation and incorporation of the town in 1786. Up to that time, and for some years after, the aid of machinery in the productive arts was but little known. Hand work was the rule. Most of the manual trades followed in England at the time of the colonization of America were represented in the persons of the early colonists.

The necessities of five generations of colonists on the borders of the broad wilderness of America greatly stimulated the inventive and manufacturing spirit. The truth of the old Spanish proverb, "Necessity is the mother of invention," could hardly be better exemplified than in the industrial development of Connecticut and New England. But all salient manifestations of this spirit of invention and home production were repressed by the mother country. British workshops were jealous of the least attempts of the colonists to become industrially independent of them.

IRON WORKS AT SALTONSTALL LAKE.

The projection of iron works by the New Haven people as early as 1655, and their establishment by John Winthrop and Stephen Goodyear, at the outlet of Saltonstall Lake could not be without influence upon the industrial future of this town. The ore for the bloomery was dug from the bogs of North Haven, and was, in part, taken down the

Quinnipiac in boats. Charcoal was made from the forests on the common land, and the people of New Haven assisted in building the dam. A grant of special privileges was made and great results were expected, but do not appear to have been realized.

After the death of Goodyear and the removal of Winthrop, the works were leased to Captain Clark and Mr. Payne, of Boston. In October, 1668, the General Assembly at Hartford confirmed the grant made by New Haven, and exempted the works from paying country rates for the next seven years, as appears by the following copy of the record:

At a General Assembly held at Hartford Oct. 8th 1668 (p 708). "Vpon the petition of Mr. Wm. Andrews on behalfe of Capt. Thomas Clarke, master of the Iron Workes of N: Haven, for encouragement of the sd worke in supply of the country with good iron and well wrought according to art. This Court doe confirme a grant formerly made by N: Haven viz: that the sayd persons & estates constantly and onely employed in the sayd worke shall be and are hereby exempted from payeing countrey rates for seuen yeares next ensuing. Mr. Wilford engages to pay ten shillings for this petition."

BAYONETS, SCYTHES AND COPPER COINS.

Samuel Huggins established the manufacture of bayonets in 1775. Axes and scythes were made by Captain Ezekiel Hayes. A mint for coining "coppers" was established in New Haven in 1785 and tradition says that some of the copper used was obtained at, and a short distance beyond, Mt. Carmel.

COTTON MILL AT WESTVILLE.

In 1789, three years after the incorporation of Hamden, the first cotton mill in America was established in the adjoining village of Westville. Calico printing was carried on in New Haven as early as 1780 by Amos Doolittle & Co.,

and afterwards by John Mix, Jr., who subsequently established the manufacture of buttons, and had a competitor in the person of Capt. Phineas Bradley, leading to much rivalry and advertising.

PRODUCTION OF SILK.

About the time that Hamden was set off from New Haven the domestic production of silk excited considerable attention from the public, and mulberry orchards were planted in New Haven and the adjoining towns. The Connecticut Silk Society was established in 1785. Ezra Stiles, president of the college took an active part in the promotion of this industry. His family had clothing made of silk fabrics, woven in England, from silk of their own raising, and the president at the college commencement, in 1788, wore a gown of home-spun silk.

UTILIZATION OF MILL RIVER.

Mills were established early at the Beaver Ponds, and near West Rock, also at Mill Rock, on Mill River, and at Mt. Carmel and also a mill for fulling cloth.

Mill River has been well utilized for power throughout its course in the town limits. The first instance was for the grist mill erected by the town of New Haven at the falls over the trap dyke at the east end of Mill Rock, two miles from New Haven. This mill was first hired and then bought of the town by Christopher Todd before the year 1686. It was long known as Todd's mill, and after 1798 passed into the possession of Eli Whitney, who erected there the first establishment in America for the manufacture of fire arms.

Before the erection of the present dam for the New Haven Water Company there were three mill sites above it now submerged ; one at the old clock factory near the present location of the covered bridge, and another formerly a paper mill and then a cotton factory above the covered bridge above the dam, and another where Waite's grist mill stood at the time the new dam was built.

From information communicated to Professor Dana by Mr. Charles Holt in 1869, we learn that the height of the successive falls of water along Mill River, northward from the 35-foot fall at Whitneyville, are at Augerville eight feet; half a mile above, at the dam of the Webbing Company, 8½ feet; one-eighth of a mile above, at Beers' Grist Mill, 8 feet; above this near Ives's Station, James Ives's dam, 10 feet; at the Mt. Carmel gap, Ives's dam, 12 feet; between the last two, 8 feet, in all 89 feet. The back water of Ives's dam is less than a fourth of a mile in length, and its head is about six miles in an air line north from Whitneyville.*

In 1836, Barber, in his history enumerated besides the armory or gun factory at Whitneyville, a factory called the Carmel works, six and a half miles from New Haven, for coach and elliptic springs, steps and axle trees for carriages; one carriage factory; one brass factory; one paper mill and some minor establishments.

Before the establishment of the armory by Mr. Whitney, the lake above the dam, then only six feet high, was known as Sabine's Mill Pond. The wife of Rev. Jonathan Edwards was drowned there in June, 1782, while attempting to water her horse by the road side.

THE COTTON GIN.

Soon after the invention of the cotton gin by Eli Whitney in the year 1793, he returned to New Haven from Georgia, and commenced the manufacture of the first gins. He there commenced the construction of the first sixty cotton gins required under his contract with the State of South Carolina, in a building on the corner of Wooster street and Chestnut street. At a later period, portions of cotton gins were made in this town. A short account of the cotton gin, and of Mr. Whitney's experience with it, will serve to show the circumstances under which he undertook the manufacture of fire-arms and founded Whitney armory.

* Prof. J. D. Dana's "Memoir on the Origin of some of the Topographical Features of the New Haven Region," p 100.

The great importance of the new invention for ginning cotton was quickly appreciated by the cotton planters, not only of Georgia, but of the neighboring States. Mr. Whitney had entered into partnership with Mr. Phineas Miller, his friend and patron, and had made application for a patent to Thomas Jefferson, then Secretary of State, but it was deemed unsafe to show the machine to the multitudes of people who came to see it until the patent had been secured. But precautions were unavailing; the building in which the machine was kept was broken open at night and the cotton gin was carried off. Its construction thus became generally known. Other machines were soon in successful operation, and before the patent could be secured.

In October, 1793, he forwarded to the Secretary of State a drawing of the cotton gin, and shortly after received the following interesting letter from Mr. Jefferson, desiring further particulars regarding the invention:

“GERMANTOWN, Nov. 16, 1793.

“SIR: Your favor of October 15, inclosing a drawing of your cotton gin was received on the 6th inst. The only requisite of the law now uncomplied with is the forwarding a model, which, being received, your patent may be made out and delivered to your order immediately.

“As the State of Virginia, of which I am, carries on household manufacture of cotton to a great extent, as I also do myself, and one of our great embarrassments is the cleaning the cotton of the seed, I feel a considerable interest in the success of your invention for family use. Permit me, therefore, to ask information from you on these points: Has the machine been thoroughly tried in the ginning of cotton, or is it as yet but a machine of theory? What quantity of cotton has it cleaned on an average of several days, and worked by hand, and by how many hands? What will be the cost of one of them made to be worked by hand? Favorable answers to these ques-

tions would induce me to engage one of them to be forwarded to Richmond for me. Wishing to hear from you on the subject, I am, sir,

“Your most obed’t servant,

“TH: JEFFERSON.”

Mr. Whitney wrote Mr. Jefferson Nov. 24, 1793, as follows :

“It is about a year since I first turned my attention to constructing this machine, at which time I was in the State of Georgia. Within about ten days after my first conception of the plan, I made a small, though imperfect, model. Experiments with this encouraged me to make one on a larger scale; but the extreme difficulty of procuring workmen and proper materials in Georgia prevented my completing the larger one until some time in April last. This, though much larger than my first attempt, is not above one-third as large as the machines may be made with convenience. The cylinder is only two feet two inches in length and six inches in diameter. It is turned *by hand*, and requires the strength of one man to keep it in constant motion. It is the stated task of one negro to clean fifty weight (I mean fifty pounds after it is separated from the seed), of the green seed cotton per day.”

The patent for the cotton gin was issued under date of March 4, 1794.

Infringements had become numerous and formidable. Great claims were made of the superiority of the “*saw gin*,” in which the teeth were cut in the edge of annular discs of iron, instead of being made of wire.

Mr. Whitney found it extremely difficult to obtain the money requisite for the manufacture of the gins; enormous interest was paid for some of the loans.

He was prostrated by sickness, his work shops were consumed by fire, and it was necessary to resort to the courts to secure the benefits of his invention.

The first suit, in 1797, was decided against the patent, although the judge had charged the jury pointedly in favor of the plaintiff. Mr. Miller wrote of this result as follows: "Thus, after four years of assiduous labor, fatigue and difficulty, are we again set afloat by a new and unexpected obstacle. Our hopes of success are now removed to a period still more distant than before, while our expenses are realized beyond all controversy."

Two years later, in April, 1799, he wrote: "The prospect of making anything by ginning in this State [Georgia] is at an end. Surreptitious gins are erected in every part of the country; and the jurymen at Augusta have come to an understanding by themselves that they will never give a verdict in our favor, let the merits of the case be as they may."

Upon the suggestion by many of the planters of South Carolina, that if an application were made to their Legislature by the citizens to purchase the right of the patentees for that State, there was no doubt that it would be done to the satisfaction of all parties, petitions were circulated and very generally signed, and Miller and Whitney offered to sell the right for the State of South Carolina for one hundred thousand dollars. Mr. Whitney, in Dec., 1801, wrote of the result: "I have been at this place [Columbia] a little more than two weeks attending the Legislature. They closed their session at ten o'clock last evening. A few hours previous to their adjournment they voted to purchase for the State of South Carolina my patent right to the machine for cleaning cotton at fifty thousand dollars, of which sum twenty thousand is to be paid in hand and the remainder in three annual payments of ten thousand dollars each.

This is selling the right at a great sacrifice. If a regular course of law had been pursued, from two to three hundred thousand dollars would undoubtedly have been received. The use of the machine here is amazingly extensive, and the value of it beyond all calculation. It may, without exaggeration, be said to have raised the value of seven-eighths of all the three Southern States from fifty to one hundred

per cent. We get but a song for it in comparison with the worth of the thing, but it is securing something. It will enable Miller & Whitney to pay all their debts and divide something between them. It establishes a precedent which will be valuable, as it respects our collections in other States, and I think there is now a fair prospect that I shall in the event realize property enough to render me comfortable and in some measure independent."

* * * * *

Negotiations were then opened with the State of North Carolina, and the prospects of the patentees were brightening, when the Legislature of South Carolina, at its succeeding session, annulled the contract and suspended the payment of the balance of the thirty thousand dollars and instituted suit for the recovery of the twenty thousand which had been paid over, but the next Legislature, in 1804, rescinded this unjust legislation of the previous Legislature.

By the death of his partner, Mr. Miller, in December, 1803, Mr. Whitney was left alone to struggle with this continued opposition to the realization of his hopes of substantial reward for his invention and labors. A large portion of the money obtained from South Carolina and for contracts with the State of North Carolina was expended in fruitless law suits in Georgia. But at last, in 1807, Judge Johnson of the United States Court in Georgia, rendered the following decision in favor of Mr. Whitney :

"The complainants in this case [Whitney, survivor of Miller & Whitney], are proprietors of the machine called the Saw Gin; the use of which is to detach the short staple cotton from its seed.

The defendant [Arthur Fort], in violation of their patent rights, has constructed and continues to use this machine, and the object of this suit is to obtain a perpetual injunction to prevent a continuance of this infraction of complainant's right.

Defendant admits most of the facts in the bill set forth, but contends that the complainants are not entitled to the benefits of the act of congress on this subject because:

1st. The invention is not original.

2d. It is not useful.

3d. That the machine which he uses is materially different from their invention in the application of an improvement, the invention of another person.

The court will proceed to make a few remarks upon the several points as they have been presented to their view: whether the defendant was now at liberty to set up this defense whilst the patent-right of complainant remains unrepealed has not been made a question, and they will therefore not consider it.

“To support the originality of the invention the complainants have produced a variety of depositions of witnesses examined under commission, whose examination expressly proves the origin, progress and completion of the machine by Whitney, one of the co-partners. Persons who were made privy to his first discovery, testify to the several experiments which he made in their presence before he ventured to expose his invention to the scrutiny of the public eye. But it is not necessary to resort to such testimony to maintain this point. The jealousy of the artist to maintain that reputation which his ingenuity has justly acquired, has urged him to unnecessary pains in this subject. There are circumstances in the knowledge of all mankind which prove the originality of this invention more satisfactorily to the mind than the direct testimony of a host of witnesses. The cotton plant furnished clothing to mankind before the age of Herodotus. The green seed is a species much more productive than the black and by nature adapted to a much greater variety of climate. But by reason of the strong adherence of the fibre to the seed, without the aid of some more powerful machine for separating it than any formerly known among us, the cultivation of it would never have been made an object. The machine

of which Mr. Whitney claims the invention so facilitates the preparation of this species for use that the cultivation of it has suddenly become an object of infinitely greater national importance than that of the other species ever can be. Is it then to be imagined that if this machine had been before discovered the use of it would ever have been lost, or could have been confined to any tract or country left unexplored by commercial enterprise? But it is unnecessary to remark further upon this subject. A number of years have elapsed since Mr. Whitney took out his patent and no one has produced or pretended to prove the existence of a machine of similar construction or use.

"2d. With regard to the utility of this discovery, the court would deem it a waste of time to dwell long upon this topic. Is there a man who hears us who has not experienced its utility? The whole interior of the Southern States was languishing and its inhabitants emigrating for want of some object to engage their attention and employ their industry, when the invention of this machine at once opened views to them which set the whole country in active motion. From childhood to age it has presented to us a lucrative employment. Individuals who were depressed with poverty and sunk in idleness have suddenly risen to wealth and respectability. Our debts have been paid off. Our capitals have increased and our lands trebled themselves in value. We cannot express the weight of the obligation which the country owes to this invention. The extent of it cannot now be seen. Some faint presentiment may be formed from the reflection that cotton is rapidly supplanting wool, flax, silk and even furs in manufactures and may one day profitably supply the use of specie in our East India trade. Our sister states, also, participate in the benefits of this invention, for, besides affording the raw material for their manufacturers, the bulkiness and quantity of the article afford a valuable employment in their shipping.

"3d. The third and last ground taken by the defendant appears to be that on which he mostly relies. In the

specification the teeth made use of are of strong wire inserted into the cylinder. A Mr. Holmes has cut teeth in plates of iron and passed them over the cylinder. This is certainly a meritorious improvement in the mechanical process of constructing this machine. But at last, what does it amount to, except a more convenient mode of making the same thing? Every characteristic of Mr. Whitney's machine is preserved. The cylinder, the iron tooth, the rotary motion of tooth, the breast work and brush, and all the merit that this discovery can assume is that of a more expeditious mode of attaching the tooth to the cylinder. After being attached, in operation and effect they are entirely the same. Mr. Whitney may not be at liberty to use Mr. Holmes' iron plate, but certainly Mr. Holmes' improvement does not destroy Mr. Whitney's patent-right. Let the decree for a perpetual injunction be entered."

The cotton gin as an invention has been in use nearly a century, and although we have passed through a period of wonderful inventive activity it remains substantially unchanged in the essential features of its construction. The revolving toothed cylinder, the screen and the brush still constitute the chief necessary parts of the machine. This invention hastened the march of civilization, made the cotton states rich and changed the commerce of the world.

It is stated, that in the year 1784 a vessel that carried *eight* bales of cotton from the United States to Liverpool was seized in that port on the ground that so large a quantity of cotton, in a single cargo, could not be the produce of the United States.

In the year 1791 the whole cotton crop of the United States was but 2,000,000 pounds. In 1792 the quantity exported was only 138,324 pounds, but by the year 1809 it had increased to nearly 18,000,000 pounds. In 1845, fifty-two years after the invention of the cotton gin, it was more than 1,000,000,000 of pounds (2,395,000 bales, averaging above 430 pounds). In 1791, the cotton annually produced

in the whole world was estimated at 400,000,000 pounds, of which the United States, consequently, produced only 1-245th. In 1845 the United States produced more than seven-eighths of the world's supply.

In 1880 there were in the United States over one thousand establishments for the manufacture of cotton, paying annually over \$45,000,000 in wages, using materials to the value of \$113,765,537, and producing cotton goods valued at \$210,950,383.

WHITNEY ARMORY.

The site upon which the Armory now stands, together with the water power and the old mill, were bought by Mr. Whitney in 1798, six years after his graduation from College. He was then about thirty-three years old. His invention of the cotton gin and his frequent visits to the South and Washington, on business connected with it, had made him well known to Mr. Jefferson and other officers of the Government, on whom he had made a most favorable impression. Accordingly, when the United States needed a new supply of fire arms, Mr. Whitney sought and easily obtained a contract for the manufacture, and he was encouraged to establish an armory where arms could be made for the United States.

In introducing this portion of the history we cannot do better than to print the following letter, addressed by Mr. Whitney to the Secretary of the Treasury at that time, and now first published:

"TO OLIVER WOLCOTT, Esq.,
Secretary of the Treasury of the U. S.

"NEW HAVEN, May 1, 1798.

"SIR: By the debates in Congress I observe that they are about making some appropriations for procuring arms, etc., for the United States.

"Should an actual war take place or the communication between the United States and the West India Islands *continue* to be as hazardous and precarious as it now is, my business of making the Patent Machines for Cleansing Cotton must, in the meantime, be postponed. I have a number of workmen and apprentices whom I have instructed in working in wood and metals, and whom I wish to keep employed. These circumstances induced me to address you and ask the privilege of having an opportunity of contracting for the supply of some of the articles which the United States may want. I should like to undertake to manufacture ten or fifteen thousand stand of arms.

I am persuaded that machinery moved by water, adapted to this business, would greatly diminish the labor and facilitate the manufacture of this article. Machines for forging, rolling, floating, boring, grinding, polishing, etc., may all be made use of to advantage.

"Cartridge, or cartouche box, is an article which I can manufacture. I have a machine for boring wood of my own invention, which is admirably adapted for this purpose.

"The making of swords, hangers, pistols, etc., I could perform.

"There is a good fall of water in the vicinity of this town [New Haven] which I can procure, and could have works erected in a short time. It would not answer, however, to go to the expense of erecting works for this purpose unless I could contract to make a considerable number.

"The contracting for the above articles will not, I suppose, belong to the Department of the Treasury; but if you will take the trouble to mention me to the Secretary of War, I shall consider it as a particular favor.

"I shall be able to procure sufficient bonds for the fulfillment of a contract of the kind above mentioned, and will

come forward to Philadelphia, immediately, in case there is an opportunity for me to make proposals.

“With the highest respect, I am, sir,

“Your obedient servant,

“ELI WHITNEY.”

The few pages following are from the Memoir of Eli Whitney, by Professor Denison Olmsted.*

“In 1798 Mr. Whitney became deeply impressed with the uncertainty of all his hopes founded upon the Cotton Gin, notwithstanding their high promise, and he began to think seriously of devoting himself to some business in which superior ingenuity, seconded by uncommon industry, qualifications which he must have been conscious of possessing in no ordinary degree, would conduct him by a slow, but sure route, to a competent fortune, and we have always considered it indicative of a solid judgment and a well balanced mind, that he did not, as is frequently the case with men of inventive genius, become so poisoned with the hopes of vast and sudden wealth as to be disqualified for making a reasonable provision for life, by the sober earnings of frugal industry.

THE MANUFACTURE OF FIRE ARMS.

“The enterprise which he selected in accordance with these views was the manufacture of fire arms for the United States. He accordingly addressed a letter to the Hon. Oliver Wolcott, Secretary of the Treasury, and through his influence obtained a contract for ten thousand stand of arms, amounting (as the price of each musket was to be thirteen dollars and forty cents) to one hundred and thirty-four thousand dollars,—an undertaking of great responsibility, considering the limited pecuniary resources of the under-

* First published in the *American Journal of Science* for 1832 and separately by Durrie & Peck, in 1846—8vo, 80 pages.

taker. This contract was concluded on the 14th of June, 1798, and four thousand were to be delivered on or before the last day of September of the ensuing year, and the remaining six thousand in one year from that time; so that the whole contract was to be fulfilled within a little more than the period of two years, and for the due fulfillment of it Mr. Whitney entered into bonds to the amount of thirty thousand dollars. He must have engaged in this undertaking resolved 'to attempt great things,' without stopping to weigh all the chances against him, for as yet, the works were all to be erected, the machinery to be made, and much of it to be invented; the raw materials were to be collected from different quarters, and the workmen themselves, almost without exception, were yet to learn the trade. Nor was it a business with which Mr. Whitney himself was particularly conversant. Mechanical invention, a sound judgment and persevering industry, were all that he possessed, at first, for the accomplishment of a manufacturing enterprise, which was at that time probably greater than any man had ever undertaken in the State of Connecticut.

"The low state of the mechanic arts, moreover, increased his difficulties. There were in operation near him no kindred mechanical establishments, upon which some branches of his own business might lean: even his very tools required to be to a great extent fabricated by himself. If it is recollected also in what a depressed state the cotton ginning business was at this period, it will appear still more evincive of the bold spirit of enterprise which Mr. Whitney possessed, as it will be seen that he could not avail himself of any resources from that quarter, nor could he reasonably hope to derive from the same source any future succor. But Mr. Whitney had strong friends among the most substantial citizens of New Haven, who had been witnesses alike of the fertility of his genius and the extent of his industry. Ten of these came forward as his security to the bank of New Haven for a loan of ten thousand dollars. Mr. Wolcott, on the part of the United States, advanced five

thousand more at the time of contract, with the promise of a similar sum as soon as the preparatory arrangements for the manufacture of arms was completed. No farther advances were to be demanded until one thousand stand of arms were ready for delivery, at which time the additional sum of five thousand dollars was to be advanced. Full payment was to be made on the delivery of each successive thousand, with occasional advances at the discretion of the Secretary.

“The expenses incurred in getting the establishment fully into operation must have greatly exceeded the expectation of the parties, for advances of ten and fifteen thousand dollars were successively made by the government, above what was originally contemplated; but the confidence of the government seems never to have been impaired: for the Secretary, after having examined Mr. Whitney’s works in person, declared to him, in the presence of witnesses, that the advances which he had made had been laid out with great prudence and economy, and that the undertaker had done more than he should have supposed possible with the sum advanced.

“The site which Mr. Whitney had purchased for his works was at the foot of the celebrated precipice called East Rock, within two miles of New Haven. This spot (which is now called Whitneyville) is justly admired for the romantic beauty of its scenery. A waterfall of moderate extent afforded here the necessary power for propelling the machinery. In this pleasant retreat Mr. Whitney commenced his operations, with the greatest zeal; but he soon became sensible of the multiplied difficulties which he had to contend with. A winter of uncommon severity set in early and suspended his labors, and when the spring returned, he found himself so little advanced, that he foresaw that he would be utterly unable to deliver the 4,000 muskets according to contract. In this predicament, he resolved to throw himself on the indulgence of the enlightened Secretary of the Treasury, to whom he explained at length the

various causes which had conspired to retard his operations. [Letter dated June 29, 1799.]

“‘I find (says he), that my personal attention and oversight are more constantly and essentially necessary to every branch of the work, than I apprehended. Mankind, generally, are not to be depended on, and the best workmen I can find are incapable of directing. Indeed, there is no branch of the work that can proceed well, scarcely for a single hour, unless I am present.’”

At the end of the first year after the contract was made, instead of 4,000 muskets, only 500 were delivered, and it was eight years, instead of two, before the whole 10,000 were completed. The entire business relating to the contract was not closed until January 1809, when (so liberally had the government made advances to the contractor), the final balance due Mr. Whitney was only \$2,450.

“During the ten years Mr. Whitney was occupied in performing this engagement, he applied himself to business with the most exemplary diligence, rising every morning as soon as it was day, and at night, setting every thing in order appertaining to all parts of the establishment, before he retired to rest. His genius impressed itself on every part of the manufactory, extending even to the most common tools, all of which received some peculiar modification which improved them in accuracy or efficacy, or beauty. His machinery for making the several parts of a musket, was made to operate with the greatest possible degree of uniformity and precision. The object at which he aimed, and which he fully accomplished, was to make the same part of different guns, as the locks, for example, as much like each other as the successive impressions of a copper-plate engraving. It has generally been conceded that Mr. Whitney greatly improved the art of manufacturing arms, and laid his country under permanent obligations, by augmenting her facilities for national defence. So rapid has been the improvement in the arts and manufactures in this country, that it is difficult to conceive of the low state in which

they were thirty years ago. To this advancement the genius and industry of Mr. Whitney most essentially contributed, for while he was clearing off the numerous impediments which were thrown in his way, he was at the same time performing the office of a pioneer to the succeeding generation.

"In the year 1812, he entered into a new contract with the United States, to manufacture for them 15,000 stand of arms; and in the meantime he executed a similar engagement (we know not how extensive), for the State of New York. Although his resources enabled him now to proceed with much greater dispatch, and with far less embarrassment than in his first enterprise, yet some misunderstanding arose with one of the agents of the government, which made it necessary for him to bring his case before the Secretary of War. The following testimonials, which he obtained on this occasion from Governor Tompkins, and from Governor Wolcott, will serve to show in what estimation he was held by those who knew him best, and who were most competent to judge of his merits. The letters, dated May, 1814, are both addressed to General Armstrong, the existing Secretary of War. Governor Tompkins observes as follows: "I have visited Mr. Whitney's establishment at New Haven, and have no hesitation in saying that I consider it the most perfect I have ever seen; and I believe it is well understood, that few persons in this country surpass Mr. Whitney in talents as a mechanic, or in experience as a manufacturer of muskets. Those which he has made for us, are generally supposed to exceed in form and quality, all the muskets either of foreign or domestic fabrication, belonging to the state, and are universally preferred and selected by the most competent judges.

'It is perhaps proper for me to observe further, that all Mr. Whitney's contracts with the state of New York have been performed with integrity, and to the entire satisfaction of the several military commissaries of the state.'

"Governor Wolcott's testimony is still more full, as his opportunities for acquaintance with Mr. Whitney had been more extensive. We insert the letter entire, as not only indicating the high reputation of the individual to whom it relates, but exemplifying the liberality with which the writer is known always to have fostered and encouraged genius and merit.

"NEW YORK, May 7, 1814.

"*Sir*—I have the honor to address you on behalf of my friend, Eli Whitney, Esq., of New Haven, who is a manufacturer of arms, under a contract with your department. Mr. Whitney first engaged in this business under a contract with me, as Secretary of the Treasury; when, according to existing laws, all contracts for military supplies were formed under my superintendence. I have since been constantly acquainted with him, and venture to assure you that the present improved state of our manufactures is greatly indebted to his skill and exertions; that though a practical mechanic he is also a gentleman of liberal education, a man of science, industry and integrity, and that his inventions and labors have been as useful to this country as those of any other individual. Moreover, that if any further alterations or improvements in the construction of military machines are proposed, Mr. Whitney is one of the few men who can safely and advantageously be consulted, respecting the best mode of giving them effect.

"I make these declarations to you with a perfect conviction that they express nothing more than Mr. Whitney has a right to demand from every man who is acquainted with his merits and capable of estimating their value; and understanding that he experiences some difficulties in regard to his contract, I venture respectfully to request that you would so far extend to him your favor as to inform yourself particularly of the merits of his case and the services he can perform; in which case I am certain he will

receive all the patronage and protection to which he is entitled.

"I have the honor to remain, with the highest respect, sir, your obedient servant,

(Signed) "OLIVER WOLOOTT.

"*The Hon. Secretary Armstrong.*"

UNSUCCESSFUL COMPETITORS.

Several other persons made contracts with the government at about the same time, and attempted the manufacture of muskets, following substantially, so far as they understood it, the method pursued in England. The result of their efforts was a complete failure to manufacture muskets of the quality required, at the price agreed to be paid by the government; and in some instances they expended in the execution of their contracts, a considerable fortune in addition to the whole amount received for their work.

The low state to which the arts had been depressed in this country by the policy of England, under the colonial system, and from which they had then scarcely begun to recover, together with the high price of labor and other causes, conspired to render it impracticable at that time even for those most competent to the undertaking, to manufacture muskets here in the English method. And doubtless Mr. Whitney would have shared the fate of his enterprising, but unsuccessful competitors, had he adopted the course which they pursued; but his genius struck out for him a course entirely new.

"In maturing his system he had many obstacles to combat, and a much longer time was occupied than he had anticipated; but with his characteristic firmness he pursued his object, in the face of the obloquy and ridicule of his competitors, the evil predictions of his enemies, and the still more discouraging and disheartening misgivings, doubts and apprehensions of his friends. His efforts were at length

crowned with success, and he had the satisfaction of finding that the business which had proved so ruinous to others, was likely to prove not altogether unprofitable to himself.

“Our limits do not permit us to give a minute and detailed account of this system; and we shall only glance at two or three of its more prominent features, for the purpose of illustrating its general character.

THE UNIFORMITY SYSTEM.

“The several parts of the musket were, under this system, carried along through the various processes of manufacture, in lots of some hundreds or thousands of each. In their various stages of progress, they were made to undergo successive operations by machinery, which not only vastly abridged the labor, but at the same time so fixed and determined their form and dimensions, as to make comparatively little skill necessary in the manual operations. Such were the construction and arrangement of this machinery, that it could be worked by persons of little or no experience, and yet it performed the work with so much precision, that when, in the later stages of the process, the several parts of the musket came to be put together, they were as readily adapted to each other, as if each had been made for its respective fellow. A lot of these parts passed through the hands of several different workmen successively (and in some cases several times returned, at intervals more or less remote, to the hands of the same workman), each performing upon them every time some single and simple operation, by machinery or by hand, until they were completed. Thus Mr. Whitney reduced a complex business, embracing many ramifications, almost to a mere succession of simple processes, and was thereby enabled to make a division of the labor among his workmen, on a principle which was not only more extensive, but also altogether more philosophical than that pursued in the English method. In England, the labor of making a musket

was divided by making the different workmen the manufacturers of different limbs, while in Mr. Whitney's system the work was divided with reference to its nature, and several workmen performed different operations on the same limb.

"It will be readily seen that under such an arrangement any person of ordinary capacity would soon acquire sufficient dexterity to perform a branch of the work. Indeed, so easy did Mr. Whitney find it to instruct new and inexperienced workmen, that he uniformly preferred to do so, rather than to attempt to combat the prejudices of those who had learned the business under a different system.

"When Mr. Whitney's mode of conducting the business was brought into successful operation, and the utility of his machinery was fully demonstrated, the clouds of prejudice which lowered over his first efforts were soon dissipated, and he had the satisfaction of seeing not only his system, but most of his machinery, introduced into every other considerable establishment for the manufacture of arms, both public and private, in the United States.

"The labors of Mr. Whitney in the manufacture of arms have been often and fully admitted by the officers of the government, to have been of the greatest value to the public interest. A former Secretary of War admitted, in a conversation with Mr. Whitney, that the government were saving \$25,000 per annum at the two public armories alone, by his improvements. This admission, though it is believed to be far below the truth, is sufficient to show that the subject of this memoir deserved well of his country in this department of her service.

"It should be remarked that the utility of Mr. Whitney's labors during the period of his life which we have now been contemplating was not limited to the particular business in which he was engaged. Many of the inventions which he made to facilitate the manufacture of muskets, were applicable to most other manufactures of iron and steel. To many of these they were soon extended, and became the

nucleus around which other inventions clustered; and at the present time some of them may be recognized in almost every considerable workshop of that description in the United States."

The foregoing extracts from the memoir of Whitney by Professor Olmsted have been made at considerable length because of the importance of this independent testimony to the history of the progress of manufacturing industry in the town of Hamden, and also in the United States. It was written, also, soon after Mr. Whitney's death, and by one who may be said to have been his contemporary, and who thus was largely cognizant by actual observation of the events and facts he has recorded.

Although involving some repetition, further observations and details may be added to emphasize and make more clear the importance and value of Mr. Whitney's labors to the world. The writer has also been permitted to examine the numerous papers and letters left by Mr. Whitney, some of which are extremely interesting for the light they throw upon the condition of manufacturing industry in the first part of this century. In regard to the fabrication of fire arms, for example, a memoir upon the subject, written by Mr. Whitney, at Washington, in 1812, is so important that it is given here entire. The paper appears to have been prepared to submit to the War Department in support of an application for another contract to make arms for the United States at the Whitneyville armory.

THE MANUFACTURE OF FIRE ARMS.

"The following remarks are the result of twelve years' attention to the subject of manufacturing Fire Arms. The writer believes himself to have possessed greater advantages for obtaining information on this subject than any other individual in the United States, and his attention to it has been stimulated by considerations of private interest and personal reputation as well as by a sincere wish to see

his Country excel in an art so indispensable to its safety and independence.

1. A good musket is a complicated engine and difficult to make—difficult of execution because the conformation of most of its parts corresponds with no regular geometrical figure. Being familiarized to the musket from our earliest childhood we are not aware of its complexity, though each musket, with the bayonet, consists of fifty distinct parts.

2. Since the invention of fire arms nations have been powerful in proportion to the number of their citizens skilled in the fabrication of these weapons.

3. None of the nations of Europe have made good military guns, except the French and English.

4. In Asia, Africa and South America the art of making fire arms is either wholly unknown or but very imperfectly understood—hence the superiority of well-armed European troops over the forces of those countries.

5. In civilized countries the principal object of fire arms being the national defence, this species of manufacture cannot flourish unless aided by the protection and fostering hand of government. The government of France through all its changes for the last one hundred years, has made it a constant and primary object to encourage and extend its manufactories of muskets; hence the excellence of their arms, and hence the means indispensable to the acquisition of that power which she now possesses. The government of Great Britain, next to France, has given the greatest encouragement to this species of manufacture.

6. The fabrication of fire arms as conducted in Europe is a business which cannot be readily performed by workmen bred to other occupations.

About the year 1796, the government of Great Britain raised the price of arms, and engaged all the workmen in the kingdom to deliver to the government *all* they could make in fourteen years; and about the same time they imported into England 50,000 muskets from Germany. Since that period the term has been extended with the manufac-

turers, and a premium is constantly offered by the government to any subject who will leave the occupation to which he was bred and work at certain branches of this manufacture. So great is the difficulty in fabricating good Musket Locks that, even in Great Britain, where there are the greatest number of workmen whose occupation is most nearly connected with this branch, the government finds it impossible to extend the manufacture to meet their demands. Twelve months ago, the British government had on hand 200,000 musket barrels, which could not be made up for the want of locks, etc.

7. The manufacture of muskets cannot be carried on in this country without the aid of a variety of heavy and expensive machinery moved by water. As water works are expensive and soon go to decay, the machinery should be so proportioned, and the extent of each establishment should be such as to keep *all* the machinery constantly employed.

8. Any attempt to carry on such a manufactory without a solid, fixed and sufficient capital must be abortive. The amount of the capital must be at least equal to double the value of the arms delivered in one year, and this amount will not be sufficient unless the finished work be turned in and payment for the same received every ninety days.

9. The establishment of such a manufactory is, from the very nature of things, a progressive operation, and can in no case be accomplished in less than two years, and should be continued at least twenty years to warrant such an investment of capital.

The subscriber begs leave further to remark that he has for the last twelve years been engaged in manufacturing muskets; that he now has the most respectable private establishment in the United States for carrying on this important branch of business. That this establishment was commenced and has been carried on upon a plan which is unknown in Europe, the great leading object of which is to substitute correct and effective operations of machinery for

that skill of the artist which is acquired only by long practice and experience; a species of skill which is not possessed in this country to any considerable extent.

Having actually made about 15,000 muskets, at least equal in quality to any that have been manufactured in this country, (which is more than has been accomplished by any other individual in the United States), he feels himself warranted by his own experience and success in believing that the New Methods which he has invented of working metals and forming the several parts of a musket, are practically useful and highly important to his country.

He would further state that the principal part of his property is vested in buildings, machinery, etc., suitable for carrying on the manufacture of muskets, which buildings, etc., cannot be converted to any other use without a great sacrifice, and he therefore wishes to continue in the business, and begs leave respectfully to submit to the consideration of Government whether it be for the interest of the United States to give him employment for such length of time, and upon such terms, as to afford a fair prospect of a reasonable profit for his labour.

“E. WHITNEY.

“WASHINGTON, 29th June, 1812.”

As in regard to the originality of the invention of the cotton gin an effort was made to show that it was not new, so, even in these later days, there have not been wanting persons who have endeavored to take from Mr. Whitney the credit of originating the uniformity system and making it a great practical success at the beginning of this century, thus leading in the van of the progress of the mechanic arts, and laying the foundations for the enormous industrial development of the nineteenth century. The letter to Mr. Wolcott, May 1, 1798, (page 121, of this History), contains the important paragraph, “I am persuaded that machinery moved by water adapted to this business would greatly diminish the labor and facilitate the manufacture of this

article [muskets]. Machines for forging, rolling, floating, boring, grinding, polishing, etc., may all be made use of to advantage." This alone gives us, by inference, a picture of the condition of the art of making arms at that time. It was strictly a *manufacture* by gunsmiths in their little shops. It was hand work; lock, stock and barrel were made by the smith, working first on one part and then on another, building up a musket each by itself, and consequently no two pieces were alike or could be interchanged. By this slow and unsystematic method, the government, obviously, could not be supplied with arms in large numbers at short notice. It was Whitney's mission to solve the problem, and give to his country, not only arms in quantity, but arms of superior mechanism, workmanship and low cost, having, also, the important principle of interchangeability of parts.

Eli Whitney started this manufacture of fire arms under peculiar difficulties, and it is safe to assert that if he had not already formulated in his mind a new method and system of manufacturing, he would never have had the courage to undertake to make ten thousand muskets for the United States. Although this number may appear small and even insignificant beside the large numbers now turned out from the armory, and from the immense establishments of the government, it was a large number for that period, and it is surprising that anyone should have been found to take such a risk and responsibility. The manufacture of military fire arms in quantity had not been undertaken in this country. The arms used in the Revolutionary War had been obtained from France or other countries by running the blockade. A few gun barrels were imported. There were some gunsmiths, like other mechanics, in the country, repairing and perhaps now and then making a gun or two in the old way, one at a time. There were no skilled workmen in the country whom Mr. Whitney could call about him to undertake such a giant task. Neither were there, at that early date, the machine tools which now so

simplify and cheapen, while ensuring accurate mechanical operations. There were no engine lathes, no planers, no milling, slotting or drilling machines; all these were yet to be evolved, but we may believe existed in an embryotic form in the mind of Whitney. To the ordinary mechanic of that day, the production of ten thousand complete muskets seemed an almost endless and impossible task. But to the young inventor, who had already had great experience in mechanical matters, and who, by his cotton gin, had revolutionized, or we may say created, the cotton industry for the United States and the world, the way was clear. He had projected the new system destined to replace all the old methods, and to inaugurate a new era of industrial life, not only in the making of fire arms, but in the production of any article or machine required in great numbers. This new system is that now known as the Uniformity System, under which our great manufacturing establishments are now conducted, especially those for the fabrication of arms, watches, clocks, sewing machines and all other complicated pieces of mechanism required in great numbers. The system consists in making each separate part of a machine independently of the particular machine it is to form a portion of. The parts being made so nearly alike in form and finish that any one of them may be taken to fill the place for which it was designed, and if one piece becomes injured or broken another piece can be substituted without the necessity of being changed in form or specially fitted. In other words, parts having the same function, in each different piece of mechanism of the same kind, being made exactly alike, may be substituted or interchanged one with another. This may be said to constitute the uniformity system. This uniformity of parts was secured by Mr. Whitney in various ways, but as far as possible by machine work, so that the form and finish of the pieces were not dependent directly upon the variable and uncertain movements of the hands, the accuracy of the human eye, or the skill and intelligence of the workman. Whitney secured it

at first by means of patterns, guides, templets, gauges and jigs.

With these accessories the operations on each part became simple and direct. Any ordinary unskilled mechanic, without previous training, could soon learn to make one of the parts to perfection, acquiring special dexterity and rapidity of execution of the manual work required in guiding the machine, or following the guides provided for him. Such a workman, though ignorant of the operations required of others, or perhaps of the machine upon a part of which he is working, becomes specially expert in the work assigned to him, and he soon prefers to work by the piece rather than by the hour. While the system secures all the advantages of the division of labor and of great skill in the fabrication of the parts separately, it does not tend to make first-class skilled workmen in a general way. The workman becomes to a great degree merely the adjunct of a machine, and the inventive faculties are not aroused. We should also remember that all workmen are not born to be inventors and originators, and that the machines make places for many men who would never attain sufficient manual skill to enable them to succeed as general artisans. But while the system of division of labor, and making parts of machines with approximate uniformity, may be in one way destructive to the artistic development of the workman, it brings in the new beauties of uniformity, and precision of workmanship in the finished product, and so far cheapens production, and stimulates other manufactures, that thousands of men may enjoy many of the conveniencies and luxuries of life, which, under the old methods of production, would be possible only to the wealthy few. By thus promoting the general prosperity and rendering the rapid advance of civilization possible, the true interests of art and artists are promoted rather than repressed or restricted.

Mr. Whitney's determination to introduce this new system of manufacturing, by making all the parts separately

and independently one of the other, and afterwards assembling them to make the complete piece, was ridiculed and laughed at by the French and English ordnance officers to whom he explained it. It was said that by his system every arm would be a model, and that arms so made would cost enormously. Even at Washington the system could not at first be understood. After advancing so much money there was surprise and uneasiness that not a single gun had been completed, and it became necessary for Mr. Whitney to go on to Washington and explain the whole plan and system in detail. Taking with him ten pieces of each part of a musket, he exhibited them to the Secretary of War and a few army officers invited to be present. Not a single arm was presented to their view, but a succession of piles of the different parts.

Mr. Whitney, selecting one part indiscriminately from each of the piles, rapidly put the parts together and produced a musket, then another, and another musket, until the ten complete muskets had been set up. The old idea was that each musket had to be built up by making each part as needed, one part being fitted to another part, but not necessarily with exact uniformity of the similar parts of different muskets.

Amongst other minor improvements in the construction of muskets, the bronze, or brass pan, for the flint lock musket was introduced by Mr. Whitney. The ordinary iron pan became rapidly corroded by the burning powder, and the substitution of bronze was a simple but important change. He also was the first to introduce and use milling machines in the fabrication of arms. Many of the machines and machine tools in use to-day at the government armories had their germs in the machines constructed in Hamden by Mr. Whitney.

As the success of Mr. Whitney's methods became known and appreciated he was called upon for advice in several directions. Amongst others, the government armory at Springfield sought his aid, and he parted with some of his

best workmen of general knowledge, whom he had familiarized with his system and plans, to go to Springfield and introduce his system there. It was a long time, however, before Mr. Whitney's uniformity system was generally adopted. Even so late as the World's Exhibition of 1851, the exhibition of a number of American rifles, made upon the Whitney interchangeable system, excited so much attention amongst military men that the British government sent a commission of officers to this country to examine the methods of manufacture; and American gun making machines, especially milling machines, were extensively ordered. Russia, Prussia, Spain, Turkey, Sweden, Denmark and other countries, have since been supplied with American machinery for the manufacture of arms.

THE WHITNEY ARMS COMPANY.

After the death of Mr. Eli Whitney, in 1825, the works at the Armory remained in charge of his nephews, Mr. Eli Whitney Blake and Philos Blake, for ten years, until 1835. From that date until 1842 they were managed by Ex-Governor Edwards, the trustee of Mr. Whitney's estate. In the latter part of the year 1842, Mr. Eli Whitney, Jr., the only son of the inventor of the Cotton Gin, assumed the immediate control of the establishment.

The capacity of the works at that time was not greater than the production of from 1,000 to 1,500 flint lock muskets a year, and they were entirely inadequate to the increased demands rapidly growing upon them. The machinery had grown old and much worn, and, owing to the changes in the model of the government arms and the introduction of the percussion cap, much of the machinery was out of date and useless.

The power in 1842 to drive the factory was derived from two under-shot iron water wheels fourteen feet in diameter and six feet wide. These were set so low that the tide backed up the water against them for two or three feet and

necessitated frequent stoppage of the works, causing inconvenience and loss. Efforts were made to add to the effective power of these wheels by raising them eighteen inches and enclosing the bottom portions with side planking, so as to form a trough to guide the water. With these changes each wheel gave about ten horse power. The polishing works at that time were run by one little flutter wheel.

The first government contract for making rifles was obtained in 1842. The United States had at that time brought out a new model of rifle known as the "Harper's Ferry Rifle," a muzzle loader. It was $\frac{14}{16}$ calibre, and intended to carry a half-ounce ball. It was brass-mounted and had iron barrels, lap-welded. It was the first percussion lock rifle ever made by the United States, all before that date being with flint locks. Mr. Whitney, soon after taking charge, began to experiment with steel for rifle barrels in place of iron, and was the first to introduce this material, using a mild, soft steel made by Sanderson Brothers of Sheffield, England. He gave it the name of "decarbonized steel," which it retains in this country and in Europe. Many of the iron, lap-welded barrels were welded by Scoville, of Higganum, Conn. The Harper's Ferry government rifle barrels were made of iron, welded longitudinally. As early as the year 1846, Mr. Whitney commenced making improvements in the machines for drilling rifle and gun barrels. He constructed them so that the barrel would revolve as well as the drills, and arranged the parts so that the barrels could be readily lifted out of the machine to clear out the drillings and chips. Mr. Whitney's results were so encouraging that in 1847, during the Mexican war, when Jefferson Davis, then colonel of a Mississippi regiment, wrote to the Ordnance Department at Washington, for the best rifles that could be procured, Colonel Talcott, chief of the Ordnance Bureau, arranged with the Whitney Armory to supply them. The rifles were made with steel barrels. They reached and were issued to the regiment in good order, and were much ad-

mired. They were manifestly so far superior to the rifles supplied to other regiments that at Vera Cruz the men of one regiment actually refused to go forward until they could have the same kind of rifle issued to them. Colonel Davis was so greatly pleased with the new rifles that, of his own accord, he wrote to the chief of the Ordnance Department that he doubted whether so many fine rifles had ever been issued to any regiment in the world. He complimented the Ordnance Department upon the judicious selection of the arm. Subsequently Colonel Davis told Mr. Whitney of his admiration of the rifles, and said that while in Mexico one of his men went out shooting and brought in twenty pigeons, each with its head cut off by the ball, showing not only the skill of the marksman but the excellence of the rifle. Some 7,400 or 8,000 rifles of this make were supplied to the United States, and since then, up to 1856, Mr. Whitney had supplied some 30,000 or more of this model of rifle to the United States.

At the present time all military and sporting arms have their barrels made of mild steel, first drilled and then rolled down upon a mandril, or core, smaller than the finished bore.

Siemens Martin rolled steel is used. Rods about two inches in diameter are first cut into pieces or "molds" about a foot in length, weighing about nine pounds. These are drilled out longitudinally in the center, and are then heated and rolled down.

In 1848 Mr. Whitney decided to put in one of the new pattern four foot Merrick and Towne turbine wheels. Turbines at that time were but little known, and when the new wheel arrived at the armory the old hands were greatly amused with its insignificant appearance and ridiculed the idea that so small a wheel could do more than the two large ones. However, in spite of the general incredulity, the pit was blasted out, and the wheel set and started, and to the utter astonishment of the old men, gave more power than the old wheels. This wheel ran steadily until the be-

ginning of the war, when a new wheel, one of the National Water Wheel Companies' make was put in. The works are now run by one thirty-inch wheel, which, with a head of thirty-five feet of water, gives one hundred and seventy-five horse power. A twenty-four-inch wheel at the forging shop gives about sixty horse power.

The armory now has machinery equal in quality to that of any armory in the United States. The company manufactures both military and sporting rifles; single shot breech-loading and repeating rifles of the most approved invention and construction. Mr. Whitney has made many original designs and improvements in the modern magazine rifle. Almost every breech-loading and magazine rifle system of note has been improved upon by him, though but few of his improvements have been manufactured by him. The cost of tools and fixtures to be applied to the machinery for making a new arm is heavy, amounting to many thousands of dollars. One form of arm extensively made at this armory for foreign countries can be turned out at the rate of fifty thousand per annum, if required. Orders for this arm are frequently received.

Much of the machinery now in use at the armories of the country, either originated at the Whitney armory, or has been improved upon there. The arms manufactured there still maintain their reputation for superior construction and finish.

Gen. C. B. Norton, in his work upon "American Inventions and Improvements in Breech-Loading Small Arms," etc., published in the year 1852, says of this Armory:

"The Whitneyville Armory, property of the Whitney Arms Co., is now one of the largest in the United States. It is located near New Haven, in the State of Connecticut, and has a capacity for employing over five hundred men, being supplied with all the modern improvements in machinery, and now under the control of the son and grandson of the founder, who have added many valuable improvements."

“The system of breech-loading small arms, known as the ‘Whitney system,’ had its origin at this Armory, and was based upon the Laidley gun, patented in 1866. The manufacture of this arm has, for several years, been superseded by the Whitney Improved Remington Gun, Mr. Whitney having made great changes in it, so as to render it safer to use. Almost every well-known system of fire arms has been improved upon by Mr. Whitney, and he has recently brought forward a new magazine rifle, possessing all the advantages of the best rifle in the market, and with greater simplicity of construction. The lever has short motion, and the workmanship is of the highest grade.”

The establishment, at present, 1886, consists of eight principal buildings and a separate brick office, completed in July, 1885. These buildings are the gun-barrel shop, 80 x 30 feet; milling shop, 45 x 30 feet; main armory, of brick, 100x40 feet, built in 1860 to replace one burned; annealing building, 50x15 feet; foundry, 100x60 feet; assembling building and warehouse, 64 x 30 feet. There are also ten or more dwellings besides the boarding-house, erected for the convenience and comfort of the operatives. The village, built by the elder Whitney, consisted of six houses of stone, covered with stucco, in one row, along the front of the base of Mill Rock. Some of these buildings were removed when the construction of the high dam rendered a change in the direction of the road necessary. The carpenter shop is the only one of the Armory buildings now standing that was erected by the elder Whitney.

The Whitney Arms Company was organized in the year 1864, by Mr. Eli Whitney, under a charter granted by the Legislature of the State of Connecticut, and its operations have since been conducted by Mr. Whitney, the principal stockholder. The officers in 1887 are: Eli Whitney, President and Treasurer; Eli Whitney, Jr., Assistant Treasurer; Wallace H. Bradley, Secretary.

BORING TOOLS, AUGERS, GIMLETS, ETC.**W. A. IVES & CO.**

This factory is upon Mill River about a mile below Centerville and five miles from New Haven center. Here all descriptions of augers, bits and gimlets are made and shipped to all parts of the world.

The Willis Churchill Mfg. Co. was incorporated July 29, 1853, with a capital of \$75,000; one-third paid in. In March, 1855, W. A. Ives was elected treasurer, and in November, 1855, the capital was all paid in. The Hamden Auger Company was organized January 10, 1857, with Mr. W. A. Ives as president, who is also president of the W. A. Ives Company, organized March 27, 1863, for the manufacture of hardware and tools from iron, steel and other metals. Capital, \$45,000.

CANDEE RUBBER FACTORY.

The manufacture of rubber goods was established at Centerville, and carried on for several years until the business grew to such proportions that it could be conducted to better advantage in New Haven, to which place it was removed. The present organization is known as the L. Candee Company, of which Mr. Henry L. Hotchkiss is president, and Charles L. Johnson, secretary.

MOUNT CARMEL AXLE WORKS.**BY JAMES IVES.**

About the year 1830 Mr. Elam Ives, who had worked upon the construction of several sections of the New Haven and Northampton canal and had lost heavily financially by the failure of the company, conceived the idea of utilizing the water for power in manufacturing. The projectors of the canal had been disappointed by the great loss of water in the sandy and gravelly soils of the route, and especially on Hamden Plains, where the escape of water through the

sand into Mill River and Beaver Ponds was so great as to require an extra and constant supply in order to float the boats and their freight. There was a large and constant flow through the lock on Mr. Ives' farm, which had been cut in two by the canal, and by running the water around, instead of through the lock, a very good water power was secured.

He erected the factory now owned by D. H. Cooper, and this building is without doubt the birthplace of hardware manufacturing in the town of Hamden, as well as the first locality of carriage and harness hardware manufacturing by machinery and power in the United States. Here Parsons and Jason Ives, in 1833, opened the manufacture of iron carriage axles, somewhat after the present style of goods and process of making, and had established considerable trade through the agency of a younger brother, Henry Ives.

This, without question, was the first development in America of making iron carriage axles by machinery—using the engine lathe and boring machine, for turning and fitting the arm and box of the axle.

Previous to 1833 wagons and carriages had been almost entirely run on axles formed of wood, the arm being inlaid with an iron skein with a shoulder on the back, and a nut or linchpin on the front end, to keep the wheels in place—the hubs of which were lined with cast-iron boxes, set in each end.

Axles of this kind were continued in use for many years, and in the hands of such men as Norman Warner, of New Britain—the celebrated maker of southern peddler's wagons—they fairly challenged the competition of the best iron axles.

The few iron axles used previous to 1833 were mostly made in the smith shop, out of square bar iron, the beds hammered flat by hand and the arms swedged round to fit the pipe boxes, which were made of iron plates. The col-

lars on the arm, back of the box, were forged separately and afterwards shrunk on tight.

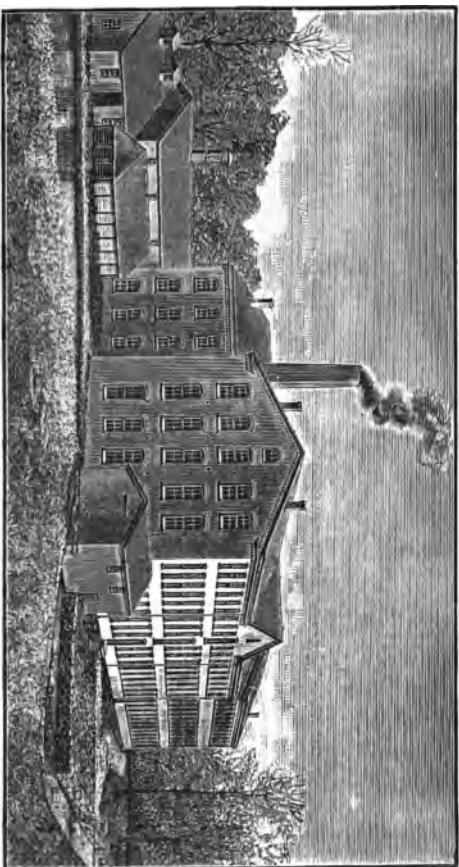
To procure a proper fitting they were ground in by hand. A long wrench was applied to the box, and with the axle in a vise the stout apprentice boy might, by a plentiful use of oil and emery, take his first step towards his ultimatum as carriage maker—a step which a Brewster and many others have gloried to relate from their high eminence in after life.

NEW HAVEN WEB COMPANY.

The business of fabricating webbing of various kinds was started by Bela A. Mann, Ward Coe and Joseph N. Leavenworth, July 1st, 1863, in the building formerly occupied by the L. Candee Rubber Company, by the side of Mill river, a short distance south of Centerville. The work commenced upon a small scale, and with one loom only, of a peculiar and novel construction, invented and made upon the spot by Mr. Mann. He even made his own patterns, and succeeded so well in the face of many obstacles, that he procured a patent from the United States covering his improvements, and with his associates organized a joint stock company for the purchase of the invention, and the more vigorous conduct of the manufacture, in January, 1864. The capital stock was \$25,000.

The business increased, and further improvements were made in the machinery, and, on the 26th day of October, 1865, the present company was formed, taking the same name as the first, but increasing the capital to \$60,000. In January, 1866, a few months after the new organization was effected, the real estate which before had been rented from the L. Candee Co. was purchased, and has since been held by the Web Company.

On the twenty-seventh day of September, 1875, all the buildings were destroyed by fire, but were immediately replaced by much more substantial structures. The new building, constructed of brick, completed in January, 1876,



NEW HAVEN WEB COMPANY.

was one hundred and twenty-five feet in length and forty-five feet in width, and in the year 1884 was extended by the addition of eighty feet more in length, making the total length of the building, at the present time, two hundred and five feet, and forty-five feet broad, with an L in the rear. It is three stories high and is filled with machinery for weaving all kinds of plain and fancy webbing. The general appearance of the works as seen from the northwest is shown by the accompanying illustration. There is also a store house 113 feet by 25 feet, a building for the dyeing, one for the water wheels and gearing, stables and sheds, and also four dwelling houses and nine tenements. Three of the houses were recently built especially for the operatives.

The power is supplied by two 42-inch turbine water wheels and one fifty horse power engine with two 48-inch fifteen feet tubular boilers.

The machinery consists of one hundred and five 24-piece looms, warpers, spoolers, braiders, etc., also all the machinery necessary for building looms; the company manufacturing its own looms.

One hundred and twenty-five persons are employed. The goods manufactured generally known as "webbing," consist of both elastic and non-elastic webbing, such as is used for making suspenders for men, for boots and shoes, for women's underwear, for braid, etc., etc. The materials used consist of rubber thread, cotton yarns and silk floss or thread. These goods are shipped directly to New York, and are on sale at the company's salesroom, No. 73 Leonard street, New York.

The company has made up some suspenders, but the bulk of the webbing made for this manufacture is sold to other manufacturers.

The officers of the company are:

Henry L. Hotchkiss, Eben Gilbert, M. F. Tyler, Ward Coe, James H. Parish—directors.

Mr. Hotchkiss is president; Mr. Ward Coe, secretary and treasurer, and Bela A. Mann, superintendent. The capital of the company, \$60,000, is all paid in.

The suspender webbing is profusely decorated with silk in various colors, and the demand for new and striking designs is such that it is found necessary to keep an artist, or designer, constantly at work for the firm.

CARRIAGE HARDWARE.

WOODRUFF, MILLER & CO.

Woodruff, Miller & Company represent the oldest and best equipped carriage hardware works—in their line of goods—in the United States. It being mostly confined to brass and malleable iron castings—the former finished and plated with silver, gold or nickel—the latter tinned, japanned or plain, as required. Their predecessors, having for half a century, in their catalogues—in addition to regular goods—invited orders for any special articles pertaining to their business and being prepared to design and make patterns for their customers when desired, the accumulation of patterns in the works has become large, and enables them to supply almost any thing in their line promptly to order. The business was established by James Ives, youngest son of Elam Ives, in 1835, under the name of the Mount Carmel Brass Works. In the same building on the canal with the "Mount Carmel Axle Works," as already recorded, Willis Churchill from Bristol, had opened the manufacture of brass surgical instruments—the first works of the class in the country—all such goods then being imported. Mr. Churchill was a mechanic of rare ability, original in the style of his goods, and in his process of manufacture, which gave him an advantage in his business, and qualified him for instructing others in mechanics. James Ives, the youngest son of Elam Ives, at about the age of 17, put himself under his instruction—working for eight dollars a month and boarding himself—eager only to get a thorough and practical knowledge of

mechanics, which was then requisite for a young man in order to get a job in a shop or to maintain a respectable position in any manufacturing department. The modern idea of dependence upon a membership in a labor league, or the more ridiculous scheme of arbitration, or the labor commission appointed by the State, was not then thought of, and the discussions now entertained in our legislatures by political schemers, ostensibly for the benefit of the laboring class, would then have been spurned as an insult by any workman esteeming himself above the level of pauperism. The learning a trade by young Ives proved especially advantageous to him, as Mr. Churchill soon removed to the lower part of the town, where he established a new water power and the business of making augers; resulting in the building of a new village, now called Augerville. Young Ives was thus left to depend upon his own resources; viz., a good trade, with a knowledge of mechanics, which he had studied night and day, and most ardently loved. With no capital, except an example of industry, and a wise and frugal training by godly parents, whom he desired to honor, he resolved to do what he could towards the consummation of his father's wishes when he hazarded his all in his old age by building the large factory—which it was in those days—for the encouragement and accommodation of manufacturing in his native town.

Very naturally, in view of the carriage axle business begun by his brothers, and the favorable location near New Haven, which was then the foremost city in the United States for the manufacture of carriages, and he, having for two or three years been engaged in the brass business, adopted the business of making solid brass carriage and harness hardware, which, as a manufacturing industry, was then unknown in the country. It may be noted here that brass mounted carriages and harness were then entirely used where metal ornaments were called for. The electro-plating of silver was unknown till sometime later.

Thus in 1835, at the age of twenty, he launched into the then unpopular line of making American goods to compete with trade in foreign goods, which was in the hands of rich capitalists, affording large profits from little effort.

Possessing a natural aversion to copying from the patterns of others he pursued the opposite course, and has reason to congratulate himself on the large success of his efforts. Room would not here allow the list of new designs and patterns of goods successfully offered by him for the approval of the carriage and harness trade during the last fifty years.

The first issue of goods was an entirely new pattern of brass hub bands for public and private coaches in New York city, designed to take the place of an English style then in use, which it most affectually accomplished. They were from 5 to 6 inches in diameter, with a close cap over the front to protect from view the ends of large axles then in use. The weight of the English pattern was 25 lbs. per set—the new ones about 15 lbs. These bands of highly polished brass were then in general use in the city, which with other corresponding mountings, kept in high order, were very fashionable. Sheldon Smith, the founder of Birmingham, Conn., and Isaac Pryor, to whom he sold his goods, were then the principal dealers in such goods in New York. The first harness goods made of solid brass, were sold to A. R. Van Nest, now a New York millionaire. It may be mentioned here that Cornelius Van Horn, now in business in New York, was then clerk with Sheldon Smith.

The first brass castings for carriage goods were made by Wm. H. Smith, of New Britain and shipped from Plainville to Mount Carmel by canal. A small brass foundry was then built, and the first brass castings for harness goods were made by Geo. D. Colburn, now of the town of Union, Conn., which he has repeatedly represented in our legislature. The first assistant pattern maker—having learned his trade in the works—was Lyman I. Todd, the founder and present manager of the Union Brass Co., of Chicago,

producing more than half the railroad car trimmings used in our country. He is a native of our town, born close to the factory. George Bradley, a good and faithful friend and workman, was his successor for over thirty years. He now lives in New Haven, where he learned his trade at brass work and assisted his father Nehemiah Bradley, in making the first church bells produced in this country.

In 1842 the works were removed from the canal power to a mill seat on Mill River, located and built by Andrew Hall in 1835; the construction of which involved a heavy expense, and with buildings added, and their subsequent destruction by fire, largely damaged Mr. Hall financially; yet much honor is due to him for the conception and thorough construction of a water power so remarkable for its safety and convenience. The dwellings now standing in a row south of the factory were also built by him.

Here upon the ruins of the fire, James Ives, assisted by Geo. F. H. Read, of New Haven, built a factory of wood, two hundred and fifty feet long, continuing and largely increasing the same business, in the name of James Ives & Co., Mr. Read being a silent partner only. In this form the works were fairly successful, considering the frequent panics in the finances of the country, amounting even to repeated suspensions of the banks in specie payments, inflicting hardships on manufacturers unknown to modern times. The works always enjoyed the reputation of making goods approved of by consumers, and obtained from five to ten per cent. higher prices than their competitors. In making brass they always used old copper brought from the West Indies. For many years previous to the war they were under contract with the late Mr. N. H. Gaston of New Haven, to take all his vessels might bring from Barbadoes, which, in addition to his cargo of molasses, often amounted to three or four thousand dollars. The price of the copper by contract was proportioned to the market value of new ingot, and the price of brass two-thirds the price of copper; the value of copper fluctuating from twenty-two to thirty

cents per pound. The present price of new ingot copper, (1885) is ten cents per pound. The unvarying price of silver for twenty-five years before the war (1861) was \$1.50 per ounce. When the brass company commenced in 1835 all coal was bought in the lump and broken at the factory. Truman Benedict, the grandfather of the present Benedicts, was about the only dealer in New Haven. In 1842 the first coal by the cargo was bought and landed on Belle dock, then just completed. Lucius Ives, who did the teaming for both the Axle and Brass works, carted the coal from the pile on the dock to the factory for one dollar per net ton. With one two horse team he made two trips a day, carrying two tons at a time. On the return at noon he would have a load of manufactured goods for the steamboat. Then no portion of the road was paved or graded even in the city; now the two and a half miles from Whitneyville to the steamboat is graded and paved, greatly reducing the labor of carting from New Haven to Mount Carmel.

In 1855 the Mount Carmel Brass works was changed to a joint stock company, under the name of Ives, Pardee Mfg. Co., with a capital of \$50,000. It paid James Ives & Co. for their property, 25,000 dollars. The officers were James Ives, president, and B. S. Pardee, secretary and treasurer, with Stephen D. Pardee, treasurer of the New Haven Savings Bank, A. F. Barnes and John Durrie, merchants of New Haven, and Henry Seaman of New York, as directors. The new company, after buying the defunct Malleable Iron Works, located on the same water power with them, were well prepared to do business to the best advantage and for a few years were successful. The first year showed a profit of twenty per cent on their capital, a part of which was by the vote of directors, appropriated to the building of a brick brass foundry one hundred feet long, with twelve furnaces, ten of which were put into constant use. But in course of time it was discovered that while rich bankers and merchants had money they also had friends who wanted office. The result was that the friends got the offices while their sup-

porters and all other stockholders lost their money, and after five years of folly, the bankrupt estate paid three cents on a dollar, wasting a capital of 60,000 dollars.

James Ives, who during this time had been only a looker-on and a sufferer, was invited by the disappointed directors to see what could be done with the property; the result of the consultation was that he, in company with J. A. Granniss, bought it, and in the name of Ives & Granniss, under an agreement never to give a business note—after nine years of hard but successful labor, they had fully redeemed the reputation which the work sustained previous to the manœuvres of the stock company, and established a flourishing money making business, much to their own comfort and the gratification of all concerned. At this period it was deemed prudent that the office and sales department should be under the management of a younger man, and by mutual agreement Mr. Granniss disposed of his interest to W. W. Woodruff and Wm. Wilcox, the former assuming the executive department, while Mr. Ives continued in the pattern and manufacturing department. Under this arrangement, in the name of Ives, Woodruff and Co. the works prospered to a remarkable degree for about twelve years, with nothing to complain of except at times an over run of orders, and just here it is a noteworthy fact characterizing all the manufacturing in Mount Carmel, that no drummers have ever been employed to travel and sell the goods produced, and very rarely an advertisement has been published in the papers. Ives & Granniss during a business of nine years expended less than two hundred dollars for travel, and not a cent for advertising, yet when the trade was transferred to Ives & Woodruff in 1870, the books contained the names of customers who had been patrons of the works over thirty years without intermission, and they or their successors are still on the books of Woodruff, Miller & Co., in 1886. After Mr. Woodruff assumed his position, he more frequently represented the business through the country to the trade with whom he had be-

come acquainted in his previous business life, to which fact may be attributed largely the flourishing condition which the business so uniformly maintained. In 1883, after an almost uninterrupted business of nearly fifty years Mr. Ives desired to retire and readily bargained with his partner, Mr. Woodruff, Frederick Ives, Willis E. Miller, Henry Ives and Arthur E. Woodruff for the disposal of his half of the property and business, who organized under the name of Woodruff, Miller & Co., and under which name it continues to flourish and improve.

ELLIPTIC AND THOROUGH-BRAOE CARRIAGE SPRINGS.

The inventor of the carriage spring, now in universal use, was an occasional resident of the town of Hamden, and his widow spent the last portion of her life here. Capt. Jonathan Mix, in 1807, secured letters patent from the United States for "main springs for carriages." This patent, which was on exhibition in the Loan Collection on the day of celebration of the Centenary, bears the signatures of Thomas Jefferson and James Madison, and of C. A. Rodney, Attorney General of the United States. The specification is as follows:

"My main spring for carriages is a double spring, about four feet in length, fastened lengthwise on the upper side of a strong axle-tree, by two bolts or bands near the middle; the ends rising about four inches, or higher if preferred, on which are to rest the shafts of the carriage [a chaise or two-wheeled vehicle being in view.] The shafts are to be fastened at each end of the springs by a bolt fastened through the shaft, the end of the spring, the axle-tree and the stay, and there secured by a nut; the bolt being made to play easily through the spring and the axle-tree to permit the spring to rise and fall. The work may be strengthened by two bars passing from the shaft to the stay, one on each side of the spring and axle, so that the spring and axle will play easily between them.

"The spring may be made of steel in leaves, or of wood plated with iron or steel, or of wood only, or any other suitable materials.

"The spring may also be made straight and fastened by bolts or bands to the underside of the axle-tree, and the stays rest on the end of the springs, thus supporting the shafts and carriage, secured by bolts and bars in the manner aforesaid.

"The principle of the invention consists in reducing the springs of the carriage to one, and fixing that to the centre of the axle-tree and supporting the shafts on it.

"It may be applied to wagons, coaches or other carriages."

PATENT FOR THOROUGH-BRACE SPRINGS FOR CARRIAGES.

[This patent was issued June 17, 1808, and is likewise signed by President Jefferson and by James Madison, Secretary of State, and C. A. Rodney, Attorney General.]

The specification is as follows:

"The thorough-braces for four-wheeled carriages in the most simple form are strong bars passing under each side of the body and resting on the ends of Mix's main or axle-tree springs and there secured by bolts; or if the thorough-braces are required to have more elasticity, they must terminate, after passing the body, in leaf springs at each end and are to be connected with the axle-tree springs either on the top of the ends secured with a bolt passing through a hole that will give play to the springs, or may be fastened under the ends of the axle-tree springs by a double-jointed shackle or by a joint or bolt at one spring, and resting on a roller upon the other in the manner of a cradle spring.

"The thorough-braces for two-wheeled carriages consist of a bar under each side of the body terminating at each end in leaf springs bowing downwards, passing through a loop under one of the cross-bars, and fastened under the other by a double-jointed shackle so as to give room for

the operation of the spring, or by a joint at one end, and resting on a roller at the other.

"These thorough-braces may be made wholly of iron or steel, or of wood, or wood skained with iron, and will supersede the necessity and use of leather thorough-braces or hangings. The principle of this invention is to substitute iron or wooden spring thorough-braces for all carriages in place of leather, and to give more elasticity and more durability, and at less expense."

CERTIFICATE OF THE EXCELLENCE OF MIX'S MAIN
AXLE-TREE SPRINGS.—1811.

"These may certify whom it may concerne. That we, the Subscribers, have examined Mix's Main Axle-tree Springs for carriages and have had a trial of the utility and the preference of those springs to any other we have been acquainted with, we having an opportunity to ride in a carriage or carriages the body of which was hung on two of Mix's Main Springs, one being placed on the center of the forward axle-tree, and the other on the center of the hind axle-tree without any thorough-braces to the same, and after mature deliberation do hereby give it as our opinion that they are the safest and most convenient and best springs ever invented or made use of, and do hereby recommend them to the Publick to be used on two or four-wheel carriages; and in our opinion a stage fixed on Mix's Axle-tree Springs is not so liable to upset, and that they will last much longer than those whose carriage bodies are hung on thorough-braces, and that the horses will carry the load easier, and the passengers will be transported much more to their ease and satisfaction.

"All of which is submitted to the Public by the Subscribers in the city of New Haven, March 15th, 1811.

"Nathan Peck,	Geo. W. Broome,
Joseph Nichols,	Amos Doolittle,
Justice Butler,	Wm. L. Bakewell."

[And others whose names are illegible and lost.]

MOUNT CARMEL BOLT COMPANY.

This company was organized and incorporated in the year 1880, and has since been in successful operation. The manufacture of stove bolts, tire bolts, rivets and a large variety of specially made bolts, is carried on under the management of James Ives, president, Samuel J. Hayes, treasurer, Lyman H. Bassett, secretary, and Allen D. Osborn, superintendent, who hold nearly the whole stock, which is \$40,000. The goods produced are of superior quality and sell readily at market prices without the aid of traveling agents.

Edward P. McLane, master mechanic ever since its organization, deserves much credit for the superiority of the machinery; he also is the inventor and patentee of the automatic machines for making the "cold-pressed swedged nuts" used on tire bolts. It may be noted here that steel instead of iron is used now for bolt making, generally on account of its cheapness.

CARRIAGE POLE WORKS.

GRANNISS & RUSSELL.

The manufacture of carriage poles and other useful objects is carried on at Mount Carmel by the firm of Granniss & Russell. The works have been in operation for about ten years.

They make a specialty of adjustable carriage poles, of which they are the owners of two patents, viz.: the "Ives Carriage Pole," so-called, and the "Bishop Pole," both of which have been and are now the most popular in the market. They also run a wagon repair shop, and country blacksmith shop, besides a department for making kegs for shipping hardware, which is a great convenience to the place. Their pole trade extends from Maine to Georgia.

PAPER BOX WORKS.

WILLIAM WITTE.

The manufacture of boxes of straw-board, which for several years past has been carried on in New Haven, was recently

removed to Mt. Carmel, and is now under the management of William Witte. The machines used are the invention of Mr. Witte, and they enable him to make superior goods at low prices. The boxes are largely used by the manufacturers in the town for packing small hardware and other goods, and the establishment of the manufacture in the town is a great convenience.

MT. CARMEL SCREW WORKS.

JAMES IVES & E. S. PIERCE.

The manufacture of wood screws was established at Mount Carmel by James Ives and E. S. Pierce in 1853. Mr. Pierce is the inventor of most of the machinery for making the screws, which are declared to be superior to any in the market, in consequence of the peculiar construction of the machines. James Ives is the owner at present of these works, and he intends to organize a stock company to purchase them and carry on the business as soon as the machinery is fully completed and in operation.

MANUFACTURE OF PRUNING SHEARS.

JOHN T. HENRY.

The business of manufacturing an improved form of pruning shears, sheep shears and garden implements, was established in the northern part of Hamden, by Mr. John T. Henry, in 1859. The idea of making a superior article was suggested to Mr. Henry by the late Rev. C. W. Everest, of Centerville, who came into his store one day and in a criticising manner asked if he could not have made a better pair of shears than those he was then using. On reflection a few moments, Mr. Henry thought he could make a much more useful and convenient article, and he so far succeeded that from that beginning an important business has grown up. These shears are made with a movable curved blade cutting against a curved jaw. The pin in the axis of movement is made large and with accuracy, securing ease of movement and a firm bearing of the cutting edges.

These implements now have not only a wide market in the United States, but they are sent largely to South America, Australia and Europe. The demand for pruning shears has been of late years largely increased in consequence of the extension of orange culture in the South. The shears are found to be useful not only in pruning but in gathering the fruit. Another form of shears is used amongst wool growers in trimming the feet of sheep.

SILK.

R. S. CLARK & CO.

The manufacture of silk thread, embroideries, tram, and floss in the town of Hamden was begun by R. S. Clark in the year 1875 at the place he now occupies. Starting a novice in the business and with very limited means, and having old, well established houses with a reputation for first-class goods as competitors, it was a formidable undertaking. Having also the business to learn and raw hands to teach the manufacture of silk, the early experience in the business was costly and was anything but satisfactory. But good goods, if put on the market, will in time find customers, and now after eleven years in the business, Clark's silk has gained a first-class reputation, and there is a growing demand for it. People now call for it. H. D. Clark, son of R. S. Clark, has recently taken out a patent for a process of covering cotton thread with silk, so that the article made has the appearance of genuine silk, and can be afforded at a much less price than all silk. Formerly nearly all silk goods were imported. Now the manufacture of silk in this country ranks as one of the great industries.

The value of silk goods made in the United States in 1850 was \$18,094.96, while in the year 1881 the value of silk manufactured in the United States was \$35,957,722. In the same period the value of imported silks has steadily diminished.

There is little doubt that if the manufacturers of silk are properly protected by a tariff, they will be able to supply nearly all the demand of the country for all kinds of silk manufactured goods.

MANUFACTURE OF SMALL BELLS.

R. S. CLARK & CO.

The manufacture of sleigh-bells and other small bells was commenced in Hamden, in the year 1867, by R. S. Clark and H. D. Smith, in the factory building then owned by Ives & Granniss. Mr. Clark, in response to the historian's request, has kindly furnished the following:

The subject of bells, of which I am called upon to write, would, if it included all kinds and the different uses that are and have been made of them, form a subject for a lengthy article. I propose to confine myself more particularly to a history and description of the smaller bells. The commencement of the manufacture of close sleigh bells does not date very far back. William Barton, of East Hampton, Conn, an artificer during the revolutionary war, whom the writer well remembers, and who went by the sobriquet of Daddy Barton, is credited as the first manufacturer of sleigh bells. He is said to have first made them in two parts, and soldered the parts together. It is said he would make a small quantity, take them to New York, Boston, and the markets, carrying them on his person, jingling them through the streets, and sell them. He afterwards cast them whole. All sleigh bells are cast around a core the size of the inside of the bell. These cores are made in a core mould, and at same time the jinglet is put in the core and after the bells are cast the core is rapped out. In the early stages of sleigh bell manufacturing the manufacturers generally used hand power only, and did not locate factories on streams for water power, or use steam. The blast to melt metal was obtained by blowing bellows by hand, using a long lever, and to fine polish bells, a large wheel was turned by hand to run the lathe for turning.

Henry Bush, who was an apprentice to William Barton, first introduced the casting of bells, using a ladle with a blast fire. By melting metal in this way, cheap metal, such as the skimmings from lead crucibles in which brass has been melted, and the waste metal from brass fins on castings can be utilized, indeed, nearly all the metal used for small bells is of this kind, which many years ago was considered of little value and often thrown away. Forty years ago most of the sleigh bells were made in New Britain, and melting was done in graphite crucibles. When the manufacturers in East Hampton began to use ladles and apply a blast to the fire when melting, they could, by using the cheap stock, make bells cheaper than New Britain manufacturers and could undersell them, and as a consequence the New Britain people were compelled to give up the business. In the year 1871 William H. Nichols, of East Hampton, patented a new style of bell. It is made of sheet brass in two parts struck out by dies, the rim of the two parts so made that by placing them under a drop they are struck together. This style of bell had a very large sale. Some five years since a Waterbury party patented a bell struck out whole from sheet brass. The manufacture of sleigh and small bells has been for many years past confined mostly to East Hampton, Conn. Now a great many are made in Waterbury, and the trade is divided between Waterbury and East Hampton.

Chime bells are now made and tuned, taking in the whole octave, so that parties enjoying sleigh riding may at the same time hear sweet music. Octaves of little bells have also been introduced into organs and utilized in the orchestra. There are a great many kinds of small bells, such as the familiar dinner bell, school bell, factory bell, jail bell, electric bell, telephone bell, clock bell, gong bell, door bell, nursery bell and bell rattle. In a word it is plain that the whole civilized life is set to bell music in one shape or another.

In the year 1867, H. D. Smith and R. S. Clark, of East Hampton, formed a copartnership under the firm name of

R. S. Clark & Co., for the manufacture of bells, and leased room and power of Ives & Granniss. In 1871, H. D. Smith sold his interest in the business to R. S. Clark, who has since carried it on alone. In 1872, R. S. Clark bought the factory and water power previously occupied by Warner & Pierpont, and moved the business to this place, where it has since been carried on.

BRICK INDUSTRY.

Tradition tells us that the first brick used in this region were imported. We find mention, however, of a brick-maker in the Records of New Haven as early as 1640, and of clay pits and brick kilns somewhat later. In 1645 "It was propounded that Edw' Chissfield might have liberte to make bricks on the plaines under the West Rocke to wch. there is a good highway, which was allowed of." Brick kilns on the New Haven river, the Quinnipiac, are mentioned in the record of the same General Court, and provision was made for a bridge over the river not far distant from them.

Although the precise date of the first efforts to make brick within the limits of the town has not been ascertained, it is certain that they were made on the western border of the Quinnipiac, a few miles below the North Haven line, a century or more ago. The clay for the first kilns was carted southward for two or three miles from at, or near, the north line of the town, the road leading over what has since been proved to be a nearly continuous deposit of brick clay. Two yards were established near where the present Quinnipiac station is, and were worked for several years, but both were finally abandoned. About 1870 Mr. H. P. Shares opened a clay bed and commenced burning brick, and since then Capt. Crafts, and four or five others, have established brick yards, with present total capacity of from twenty-five to thirty millions of bricks annually. More bricks are made in the town of Hamden than in North Haven.

According to Barber, in 1836, the brick industry of the Quinnipiac valley, partly in the town of North Haven, reached the extent of four and a half million bricks annually.

The railway gives great facilities for the transportation of these brick, and they are sent all over the State and even to New York.

The clay is well adapted to the manufacture, and it is claimed is not surpassed by any brick clay in the country. The color is good and uniform. The shrinkage in burning is slight, and the brick hold their form without twisting and warping. The good qualities of these brick are becoming better and more widely known, and the demand for them is increasing.

Until recently the fuel for burning has been chestnut and other hard woods, consuming from five thousand to six thousand cords annually. This incessant and increasing drain upon our forests is now somewhat lessened by the substitution of bituminous coal, which, for eighteen months past, has been successfully used by Capt. Crafts and found to be cheaper than wood.

Brick moulding machines have replaced the slow process of moulding by hand, and the green brick are dried upon shelves instead of upon the ground, as formerly.

In the production and delivery of one thousand brick twenty-two tons weight are handled. Each thousand weighs two tons, and the material is handled eleven times.

Quinnipiac brick are now worth from \$6 to \$7 per thousand at the yards.

Brick were also made in considerable quantities in the western part of the town about fifty years ago, using the clay of the valley of Wilmot brook, about a mile northwest of the meeting house, but the manufacture has been abandoned at that point for over twenty years. The yards have been turned into meadows and pastures, and only the deep pits remain to indicate the place.

NEW HAVEN ICE CO.

The ice of this company is obtained largely from Whitney Lake, and is in part stored in four large ice houses on the shore of the lake near Whitneyville, and is in part sent directly to New Haven to fill large and small ice houses there. The enterprise of cutting and harvesting ice in quantity was started by Messrs. Samuel Perry, George H., James M. and H. A. Townshend. The present company was organized in November, 1865, with a capital of \$7,500. About 500 tons of ice were cut at first, but the quantity has increased to 15,000 tons in 1886. From twenty-five to thirty men are employed during the summer, and one hundred and twenty-five, besides many teams, during the harvesting season. The officers of the company now are Jno. L. Treat, president, F. F. Bishop, secretary, treasurer and superintendent.

HORSE HOEING AND PLANTING MACHINES.

Mr. D. W. Shares, of Hamden, is the patentee and manufacturer of a number of important labor saving machines for hoeing and planting.

He is a practical farmer; he invented these machines for his own use, but after learning their utility, and wishing his brother farmers to share in their benefits, has introduced them to the public for the purpose of doing good and making money. He has raised potatoes the past season, with these machines, on very weedy land, without the use of the common hoe at all, either in planting or hoeing, and the labor performed in hoeing an acre for the season was less than one day.

The hoeing machines are manufactured of three different sizes; the planting and hoeing machines of two sizes. These machines were exhibited at the Connecticut State Fair, held at New Haven, at three County Fairs, and at the Connecticut State Fair, held at Bridgeport, and at each fair took the highest premium on both machines. They have been thoroughly tested, are substantially built, and

will wear as long as a plow. They are designed for the cultivation of any crops planted in rows.

The planting and hoeing machine is recommended for covering potatoes, and hoeing them the first time on any kind of land. The wings contract and expand to suit any width rows, and can be set to any slant so as to work any depth desired. A piece of sheet iron passes over the row to level it down, leaving it very smooth, and in a more workmanlike condition in all respects than the common hoe, and in less than one quarter the time. With a corn planter attached, it is recommended for planting corn in large fields and smooth land. It digs the holes, drops the corn, puts guano in the hills if necessary, and covers all at one operation, as fast as the horse can walk.

The hoeing machine is recommended for the hoeing of corn, potatoes, pumpkin, peas, beans, cotton, and hoed crops generally, on any kind of land. The wings contract and expand to suit any width of rows. It passes between the rows, the share shaving the weeds from the center of the furrow, shoving them outward until they come to the teeth, which turn inward on each side, and turn them back again into the furrow—and also the weeds that grow on the sides of the rows, and bury them so deep that no ordinary shower will wash them out—leaving the earth perfectly mellow and level; and as the teeth turn the earth, like a plow, all one way from the hills, it can run close to the hills without injuring the roots.

When the plants require hilling, the teeth are taken off; the machine then shoves the earth on to the rows and around the hills without covering up the leaves of the plant, and the crooked form of the back part of the wings gives the row the desired shape. The two forward teeth can be left on, if necessary, to loosen the earth in the furrow at the same time.

Mr. Mason C. Weld, a high authority in agricultural matters, writes of the horse hoe for corn culture, as follows:

“The thorough weeding of corn and potatoes, stirring the soil, throwing fresh earth towards the rows, and leaving a flat porous soil to receive the rains and the sunshine above the roots of each of these crops, constitutes the perfection of culture, after planting—what concerns these crops before that time, we do not now allude to. The implement we have named, according to abundant and excellent testimony, and according to our own practical trial of it under not the most favorable circumstances for several years, is calculated on free soils to do all this labor of culture, cheaply and well. We have seen fields of potatoes in which the hand hoe had not been used at all, and of corn where it was only used in planting—both looking as well as the hand hoe with plows and cultivators too, could have left them. To be sure the land was not very weedy, and it was mellow and easy to work—otherwise the hand hoe would have been, perhaps, necessary to dress out somewhat. A cut attached to the advertisement of this implement shows its general shape. It is awkward enough in looks, but not so in use. The ground is always or usually gone over twice—once with the teeth on, throwing the earth away from the rows, and exposing the roots of the weeds to the sun. The next day, or after a few hours’ scorching of the weeds, the teeth are removed, the wings, or mould boards, are dropped upon the ground, and carry the earth turned over and loosened up the day before, towards the rows, leaving a slight furrow in the center, and moderately hilling the corn or potatoes—the weeds being thus doubly exposed to the action of the sun, are very surely made way with.”

Mr. Shares is also the manufacturer of the coulter harrow, which took the highest premium at three successive Connecticut State Fairs, and numerous premiums at other exhibitions of agricultural implements.

The frame, or wood work, of this implement is built in two forms, to more perfectly adapt it to different soils and for different uses, the teeth being all the same kind. Its ad-

vantages over others lie principally in the construction of the teeth; the coulter is broad, thin blades of iron, inclining forward so as to prevent their clogging with roots, stalks, stones, etc., also to cut the sods and make an easy entrance into any kind of earth; the mold board is attached to the lower or back end of the coulter; the lower edge of the coulter is continued a short distance below the covering portion of the tooth, to form a point, which will elevate the teeth over stumps, stones and other impediments, and also give them durability. They are fastened on side bars with two bolts, in a substantial manner. It contracts and expands for convenience of transportation, storage, etc.

On the three-cornered, or double harrow, the mold boards on the teeth on one side being opposite from those on the other, the forward tooth has a double mold board, turning a furrow right and left, leaving a trench; the next following teeth throw the earth back again, and those following fill up the furrows, and so on, the last, or back teeth, having mold boards with less turn, so as to leave the land smooth; the operation being similar to that of a double gang of plows. This, it will be seen, is a lifting, loosening, and pulverizing operation.

On the straight or single harrow, the teeth are all bolted on one straight piece of timber, which is drawn by the center piece in an oblique manner, the center piece being set and held to its place by the brace. The advantages of this form over the other is, that as the mold-boards all turn one way, it leaves the land perfectly smooth, and as the center piece is movable, it can be set straight or oblique with the coulters, which gauge it to work deep or shallow. On smooth and light land it is recommended to be the best, especially for covering seed. The other form is recommended as best for stony land, and leaves the land smooth enough for ordinary purposes. In covering grain they turn the seed all under to a uniform depth, and no matter how many weeds, stalks, or other loose trash, there is no clog-

ging,—it leaves the land just as smooth,—and where the land is full of fast stones there is no catching to them, consequently there is no necessity for lifting the harrow up. On turf land the draught is much less than a common harrow of the same weight, as it takes less power to cut through sods than it does to tear through them, like a common harrow, and does the work much faster.

In preparing land for root crops, or grain, when it needs plowing several times, it is only necessary to plow but once, as all that remains can be done with this harrow in a more workmanlike manner than with a plow, and in one-fourth of the time, with the same team. Turf land, for most kinds of crops, can be plowed in the fall, or any time at leisure, and when time to plant, harrow over, and it is in as good order for planting as if plowed the day before.

The harrows are made of different sizes, from the draught of one horse to four, and are adapted to all kinds of land, except among small or low stumps. They are substantially built of the best materials, and convenient for sending to any part of the country.

This implement, like a plow or any other tool, works much the best when kept clean and bright, and the patentee advises all farmers that are in the habit of leaving their tools for days or weeks in succession by the sides of their fields, exposed to heat and storms, to rot and rust, not to buy any of his implements, or any other of any practical value, except a spade or hoe.

GYPSUM MILL.

The water power now used at the plaster or gypsum mill, (ground for fertilizing purposes), was first utilized by Mr. Hart in the manufacture of wood knobs, and afterwards for the manufacture of wheels and spokes by Beers and Fenn. The mill was burned, and was then rebuilt by Philos Beers, and used as a grist mill for grinding rye, bones, plaster, etc. After the death of Mr. Beers, the property was

purchased, in 1879, by A. J. Doolittle. The mill is now controlled by Ira Beers, a son of a former owner.

SAW MILL AND FLOUR MILL.

JOHN E. ANDREWS & SON.

This firm has established the business of furnishing flour, feed, coal and wood near the Mt. Carmel railway station. The main building is sixty feet long and three stories high. A grist mill and saw mill are connected with it, and are run by steam power. The building stands on the ground where Day Spring Lodge, F. and A. M., was instituted, and the upper story has been fitted up as a hall for public meetings.

NEEDLE FACTORY.

The fabrication of sewing needles was carried on in Hamden for twenty-one years, by J. E. & S. D. Smith, and was then transferred to Cleveland, Ohio.

THE SPERRY BLACKSMITH SHOP

was built by Russell Leek, about the year 1820, on the Cheshire road, near present residence of Hon. Norris B. Mix; afterwards moved to opposite residence of Willis Benham, where it remained, being occupied at different times by Elihu Sperry, also by his son John Sperry, until torn down to make way for the railroad.

SCHOOLS AND EDUCATION.



HE town is divided into thirteen school districts.

During the year ending August 31st, 1887, sixteen teachers were employed, as shown by the annexed list :

District No. 1. Miss Susie A. Dickerman.	District No. 8. Miss Luthera L. Mansfield.
District No. 2. Miss Lottie Thorp.	District No. 8. Miss Mary M. Augur (Primary.)
District No. 3. Miss Nellie Ives.	District No. 9. Miss Alice A. Dickerman.
District No. 4. Mrs. H. G. Dickerman.	District No. 10. Mr. Asa G. Dickerman.
District No. 4. Miss Blandina P. Dickerman (Primary.)	District No. 11. Miss Alice Thomas.
District No. 5. Miss Louise N. Linsley.	District No. 12. Miss Amelia Robinson.
District No. 6. Miss Lillian P. Stevens.	District No. 13. Miss Mary F. O'Brien.
District No. 7. Miss Stella Warner.	District No. 13. Miss Nellie Mulhall (Primary.)

For school purposes the town of Hamden was originally divided into two Societies: the Mount Carmel School Society and East Plain School Society, embracing nine school districts. The usual course adopted in the town was to employ male teachers four months, during the winter, and female teachers six months, during the remainder of the year. The pay of female teachers was about one dollar per week and "board round." The school houses were usually built on the economical plan, without regard to convenience or comfort. The desks were nailed to the wall around the room, with stationary benches, over which the boys and girls were obliged to climb, as the case demanded. The small children had a long low bench, without back, on which to keep quiet during the six hours of the day, and five and a half days of the week. The expense of teachers and incidentals was paid by the parents, according to the attendance of the children, which was too often a bid for absentees. Each Society appointed their school visitors, who visited the schools, examined teachers, etc. Out of the nine original school districts two have consolidated and

five have divided, so that now we have thirteen districts. The districts No. 4, Mt. Carmel, No. 8, Whitneyville, and No. 13, "Hamburg," have each a primary department, thus making sixteen teachers in the thirteen districts. In January, 1870, a vote was passed consolidating the districts of the town under the name of the "Hamden Union School District," but disaffection arising during the summer, resulted in rescinding the vote in October following, thus returning to the former course of each district selecting its own teacher and the town paying the bills of teachers, and a stipulated amount of incidentals.

The Board of Education is composed of nine members—three being appointed each year for the term of three years. The rules and regulations for the guidance of teachers are made by the Board, and one or more of the members are appointed acting visitors.

Attendance upon school is compulsory. The law requires that children between the ages of 8 and 14 years, shall attend regularly, at least twelve weeks in the school year, either in the schools of the town or elsewhere.

Section 1 and Section 2 of Chapter II, of the School Laws of the State, are as follows :

SECTION 1. All parents and those who have the care of children shall bring them up in some honest and lawful calling or employment, and instruct them or cause them to be instructed in reading, writing, English grammar, geography, and arithmetic.

SEC. 2. Except in cases, when owing to the physical or mental condition of a child, the instruction of such child is inexpedient or impracticable, every parent or other person having control of a child over eight and under fourteen years of age shall cause such child to attend a public day school or to elsewhere receive regular and thorough instruction in the above named studies, during at least twelve weeks or sixty full school days in any consecutive twelve months, six weeks at least of which attendance or instruction must be consecutive. Each week's failure on the part of any person to comply with the provisions of this section shall be a distinct offence, punishable with a

fine not exceeding five dollars. All offences concerning the same child shall be charged in separate counts joined in one complaint. When a complaint contains more than one count, the court may give sentence on one or more counts, and suspend sentence on the remaining counts. If at the end of twelve weeks from date of the sentence it shall appear that the child concerned has attended school regularly during that time, then judgment on such remaining counts shall not be executed.

The statistics of the attendance and of the cost of the public schools of Hamden are shown in the following table, taken from the Report of the School Board for the year ending August, 1887.

District.	Families represented.	Enumeration Jan. 1, 1887.	Registered in Schools.	Not in School.		Average attendance.			Visitors.		Incidentals.	Teachers.	Total.
				Between 4 and 8.	Between 8 and 10.	Fall.	Winter.	Spring.	Parents.	Friends.			
1	15	82	20	1	...	18.6	20.8	14.8	4	22	\$85.00	\$304.00	\$389.00
2	12	28	18	2	1	11.9	12.6	11.0	7	15	85.00	304.00	389.00
3	18	57	42	8	1	22.5	22.5	21.0	0	10	85.00	304.00	339.00
4	56	109	98	8	8	58.6	53.8	58.0	5	33	70.00	598.00	668.00
5	27	68	58	5	5	30.2	26.6	28.7	9	20	85.00	304.00	389.00
6	14	80	27	2	1	21.2	15.7	16.7	4	18	85.00	304.00	389.00
7	22	26	29	8	1	17.0	17.7	20.0	5	14	85.00	300.00	335.00
8	48	107	100	14	8	55.8	50.8	45.5	29	24	70.00	598.00	668.00
9	24	78	44	8	...	28.0	24.0	28.5	6	7	85.00	304.00	389.00
10	15	27	25	...	...	19.0	17.5	14.0	8	5	85.00	304.00	339.00
11	29	89	44	4	...	32.0	30.8	28.6	1	5	85.00	304.00	389.00
12	14	28	24	4	1	18.0	13.0	13.6	3	7	85.00	299.20	334.20
13	77	157	135	21	4	78.5	78.0	70.7	9	18	70.00	608.00	678.00
	869	771	668	80	20	.....	.....	.....	85	178	\$560.00	\$4828.20	\$5388.20

Amount paid teachers.....	\$4,828.20
Incidentals.....	560.00
Superintending, visiting, etc.....	179.00
due Wallingford in joint district.....	22.90
North Haven " ".....	19.06
Total.....	\$5,604.16
Received from State.....	1,784.75
Total cost of the schools to the town.....	\$3,869.41

Many of the children, especially those living in the central and southern portions of the town, attend school in the city of New Haven. There have been at different periods special temporary courses of instruction or private schools,

with the teachers paid by subscription, generally in the winter season, intended chiefly for the youth of both sexes requiring instruction somewhat more advanced than the teaching with district schools. Mrs. H. G. Dickerman for many years conducted a select school for both sexes in Mt. Carmel, and many Hamden teachers graduated from that school. A select school is still conducted there by Miss Emma Dickerman. A boarding school for boys was founded at Centerville by the late Rev. Charles W. Everest, and is known as the Rectory School.

THE RECTORY SCHOOL.

REV. H. L. EVEREST.

The Rectory School, for more than twenty-five years one of the foremost military boarding schools in this country, was established in the year 1843. It was commenced by Rev. Charles William Everest owing to the inadequate support which he received as rector of Grace Church, Hamden. Mr. Everest, who was then living in the house north of the "Corners," at Centerville, opened his school with only four pupils. During this year, other boys having been entered in the school, Mr. Everest purchased the Deacon Hart property lying a short distance south of the "Corners," on the main street. In May, 1844, he began the erection of the Seminary building which, greatly enlarged and improved, became known in after years as The Rectory School. Before the close of the first school-year the number of pupils had been increased to nine, and the second year opened with twelve boys. Two assistant teachers were now employed, and the school rapidly won its way both in number of pupils and with respect to its influence as a leading educational institution. At the end of five years from its commencement the number of pupils was twenty-one, at the end of eight years twenty-eight pupils, and at the expiration of ten years forty-five pupils. From this date (1853) there was a gradual increase in numbers until *sixty-five* was fixed upon as the maximum number desired. Mr.

Everest in later years was assisted in the care of his large school by six resident masters, while Major James Quinn and Col. John Arnold were respectively instructors in military tactics. The West Point "grey" was early adopted as the uniform of the school and worn by all the boys.

From time to time many additions and improvements were made by Mr. Everest in the Rectory School grounds. A wind-mill building, play-house, gas-house, and boat-house were erected, contributing materially to the comfort and convenience of the school.

Until the year 1870 the prosperity of the Rectory School was fully maintained, and its great usefulness everywhere acknowledged. Many hundred boys had graduated to take active positions in the learned professions, the army and navy, and in business life, and to-day a very large number of men prominent in public life look back with profound regard and affectionate interest to the years spent by them as pupils at this institution. Among this number is more than one well-known member of congress. At last, worn out with the grave and multiplied cares of his position, Mr. Everest deemed it wise to terminate his work as a teacher, and devote his remaining years to more strictly ecclesiastical labors. He died Jan. 11, 1877, in Waterbury, Conn., and is buried in Cedar Hill cemetery, Hartford, Conn.

As a citizen of Hamden, few men have done more than Mr. Everest to promote, in every way, the best interests of the town, especially those of the village of Centerville. Its very trees, the grand old maples shading the main street, attest the spirit of a man who lived not merely for himself or for one generation, but thought with kindly interest

"Of summers yet to come
That he should never see,"—

when his children, and the descendants of neighbors and friends would be living to reap the inheritance of forethought and toil of those gone before. His name and that of the justly famous Rectory School will not soon be forgotten.

The Rectory School, which was re-opened in September, 1885, by Mr. Everest's two sons, is now conducted as a family boarding school for boys.

ECCLESIASTICAL HISTORY.

PARISH OF MOUNT CARMEL.

AT a General Assembly of the Governor and Company of His Majesty's English Colony of Connecticut in New England, in America, holden at Hartford, in said colony, on the second Thursday of May, being the twelfth day of said month, in 1757.

“Upon the memorial of Daniel Bradly and others, inhabitants of the north part of the First Society in New Haven, showing that they live at a great distance from the public worship in said society; praying to have a committee appointed to view the circumstances of the memorialists, etc., and if they shall think it meet and best make them a distinct ecclesiastical society, etc., as by the memorial on file may more fully appear: “Resolved by this Assembly that Benjamin Hall, Samuel Bassett and Nathaniel Harrison, Esqrs., be a committee and they are hereby impowered and directed as a committee, at the cost of the memorialists, to repair to said district and view the circumstances of the memorialists, notifying said first society, etc., and having heard all parties concerned, make their report to this Assembly in October next what they shall think best and most suitable to be done in the premises.”*

In October the Parish of Mt. Carmel was established with the bounds already described (see pages 52, 53, 54).

MT. CARMEL CHURCH AND SOCIETY.

BY THE REV. L. H. HIGGINS.

The early inhabitants went to New Haven to church, till the formation of the parish of North Haven, in 1718.

* Colonial Records of Connecticut, XI, p. 39.

Forty years later, *i. e.*, in 1758, Mt. Carmel became a separate parish. The first meeting held to take action in the matter was on Jan. 31, 1758, at which Mr. Samuel Atwater was chosen "clark" and sworn, with Mr. Daniel Bradley as moderator, and Messrs. Andrew Goodyear, Samuel Dickerman, and Ithamar Todd, as a society's committee. This first meeting "adjourned to the second Tuesday of March, at 4 of the clock in the afternoon."

Provision was made for preaching during the winter of the same year. Early in the year 1759 attention was turned towards the necessity of providing a permanent place of worship.

The first meeting house was built in 1760-61, in size 55 feet long, by 40 feet wide. It was "voted to build a tarit (turret) to the meeting house, provided particular men appear to get the timber frame, and finish said tarit by free donation."

This first house, as was then customary, was provided with square pews, "dignified seats," and a massive sounding-board. It also had "Sabba'-day" houses built near, in which families refreshed and warmed themselves while waiting for a second service, as the house was never warmed with artificial heat till 1832. The first stove thus used still does good service in heating the basement of the present house of worship, as occasion requires.

The second, and present meeting house, was built, after several years of agitation and discussion, near the site of the old one, and dedicated June 10, 1840. It has been heated by a furnace since 1860. This house was remodeled in 1870, at an expense of \$2,000.

In the early history of the church and society, the house was seated and "dignified" with due respect to age and property. The current expenses of the church and society were met by taxation on the property lists, varying from .03 on the dollar to .08, in 1844. In addition to this means, a fund of \$8,000 was raised in 1800, by subscription, "for the support of the ministry;" this fund is now about

\$7,000, and its income is applied in the same direction. In June, 1849, the slips were sold at auction, which custom has continued for the most part to the present.

The church was organized as an ecclesiastical corporation January 26, 1764, composed of forty-six members, one-half of whom were males.

The first settled minister was Rev. Nathaniel Sherman, who was ordained May 18, 1769, and dismissed August, 1772. Then followed Rev. Joshua Perry, from October 15, 1783 to 1790. Rev. Asa Lyman from September 9, 1800 to April 26, 1803. Rev. John Hyde from May 20, 1806 to January, 1811. Rev. E. B. Coleman from February 5, 1812 to November 9, 1825. Rev. Stephen Hubbell from May 19, 1830 to May, 1836. Rev. James Birney from June 14, 1842 to March 29, 1846. Rev. Israel P. Warren, D.D., from July 8, 1846 to September 23, 1851. Rev. D. H. Thayer from January 5, 1853 to May 20, 1866. Rev. J. H. De Forest from May 24, 1871 to August 7, 1874. Rev. George C. Miln from December 29, 1874 to January 10, 1877. Rev. Robert C. Bell from April 16, 1879 to August 7, 1881. Rev. L. H. Higgins, acting pastor since October 23, 1881.

Deacons have been elected as follows: Daniel Bradley and Amos Peck, 1768; Stephen Goodyear, 1773; Daniel Bradley, 1783; Asa Goodyear, 1803; Aaron Bradley, 1808; Lyman Goodyear and Ezra Dickerman, 1828; Marcus Goodyear and Elihu Dickerman, 1840; Willis Goodyear, 1861; Joshua Carpenter, 1869; Andrew H. Smith, 1871; George H. Allen, 1880; E. P. McLane, 1882, and re-elected in 1886. The church clerks have for the most part been the acting ministers and pastors, down to 1870, since which time Mr. L. A. Dickerman has held the office. The Society clerks have been Samuel Atwater, 1758; Daniel Bradley, 1773; Samuel Bellamy, 1786 to 1789; Elisha Chapman, 1789 to 1795; Josiah Root, 1795 to 1804; Hezekiah Bassett, Jr., 1804 to 1813; Jason Dickerman, 1813 to 1818; Lyman Goodyear, 1818 to 1825; Ambrose Tuttle, 1825 to 1827; Ezra Dickerman, 1827 to 1832; Parsons Ives, 1832 to 1840; Ho-

bart Ives, 1840 to 1847; Lucius Ives, 1847 to 1856; Amos B. Peck, 1856 to 1858; L. A. Dickerman, 1858 to 1868; D. H. Cooper, 1858 to 1871; J. B. Jacobs, 1871 to the present time.

The church has had a total membership of 750, and now numbers 157.

Sergeant Stephen Goodyear and Alvan Bradley were chosen November 3, 1767, to assist Captain Ives in "setting the psalm;" from that time on, choristers have been annually chosen, in number from two to ten; and appropriations of money from \$15.00 to \$60.00 for singing, up to 1861.

Various musical instruments have been used to aid the singing; the fiddle, double and single bass viol, and other stringed and wind instruments taking a prominent part, till in more modern times these gave way for the melodeon, and then the cabinet organ, which also in time made room for a pipe organ, which was set up 1872 at a cost of \$1,200.

The present and only parsonage owned by the society was built in 1854, during the pastorate of Rev. Mr. Thayer, costing about \$1,750. A barn was added to the parsonage premises in 1885 at an expense of \$215.

The church has raised up one minister, viz.: Rev. George A. Dickerman; while a former minister, Rev. J. H. DeForest, is a missionary of the A. B. C. F. M. in Japan. Of previous pastors only four are now living, viz., Revs. J. P. Warren, D.D., J. H. DeForest, George C. Miln and Robert C. Bell.

HAMDEN EAST PLAIN SOCIETY.

THE CHURCH IN WHITNEYVILLE.*

In the latter part of the last century, a few individuals, residing chiefly in the west, or southwest part of this town, and belonging to churches in the neighboring towns, the majority of them to what was then called the "Fair Haven Church," in the city of New Haven, were led to entertain

* Selections from the Historical Discourse of the Reverend Austin Putnam, pastor, preached July 9th, 1876.

thoughts of uniting together to form a church of Christ. At their request an Ecclesiastical Council was called, and convened to give their advice on the subject. The Council assembled on the 6th day of August, 1795, and were composed of the following ministers and delegates :

Ministers.—Rev. James Dana, D. D., New Haven ; Rev. Noah Williston, Pastor of the Church in West Haven, and Rev. David L. Beebe, Pastor of the First Church in Woodbridge.

Delegates.—Timothy Jones, Esq., from the Second Church in New Haven ; Dea. Nathan Smith, from the Church in West Haven ; Dea. Phineas Peck, from the First Church in Woodbridge ; Dea. Stephen Goodyear, from the First Church in Hamden, and Henry Daggett, Esq., from the Third Church in New Haven.

Dr. Dana was chosen Moderator, and Mr. Beebe, Scribe. The meeting was opened with prayer by the Moderator. The individuals, at whose request the Council had been called, appeared before the Council and asked their advice touching the matters already spoken of. The Council unanimously advised them to procure certificates from the churches to which they belonged of their membership and regular standing in those churches, and to present them to the Council at a future meeting. The Council then adjourned to meet on the 18th day of the same month of August, and on that day, the 18th day of August, 1795, the Council met according to adjournment. The following persons,

Charles Alling,	Abraham Alling,	Sybil Andrews,
Hannah Alling,	Abigail Alling,	Desire Humiston,
Asa Gilbert,	Eleanor Carrington,	Sarah Turner, and
Mary Gilbert,	Hannah Bassett,	Rebecca Mix,

presented to the Council certificates of their membership and regular standing in the churches to which they belonged. They also subscribed a document prepared for the occasion, and setting forth clearly the objects they had in view, and the motives and spirit by which they were actu-

ated, in wishing to be organized into a church. Whereupon the Council voted unanimously to consider them "as a regular Church of Christ, and to receive them into the fellowship of the churches, as a sister church." The document to which they put their names, and to which I have already alluded, was highly creditable to them. It shows very plainly that this church did not have its origin in any spirit of sect or schism, nor in any spirit of hostility or opposition to other churches or Christians; but in a very different spirit; in a spirit of humility and meekness, and of love to God and all mankind; in the very spirit of Jesus. They did not leave the churches to which they belonged, and seek to establish churches of their own, because they were angry, or displeased, or dissatisfied with those churches and wished to do something in opposition to them; but for a very different reason, and in a very different spirit, as the document, which was as follows, plainly shows:

"We, whose names are underwritten, members of neighboring churches, have agreed, with the approbation of those churches, and of the Ecclesiastical Council now convened in this society, to be established as a regular distinct church, for the greater convenience of attending gospel worship and ordinances. We profess ourselves in charity with the regular churches and standing ministry. We also acknowledge the candor of the churches with which we have been particularly connected, and ask their Christian forgiveness and charity for whatever on our part, or on the part of any of us, may have caused grief. We also mutually ask forgiveness of one another, for everything which has been unworthy of the Christian profession; fervently praying for the spirit and presence of Christ in the present transaction, and in all our future proceedings. We do now solemnly, and as we hope in sincerity of soul, agree and covenant with each other to walk in fellowship as a Church of Christ, acknowledging Him as our only Head, and taking His instruction for our guide in faith and practice, in

worship and discipline. We promise to counsel and admonish one another, as it becometh saints, and with Christian humility to be subject one to another. We mutually engage to uphold the institutions of Christ, and will make it our endeavor, as God shall give opportunity and ability, to obtain the settlement, and provide for the support of a good Minister of the New Testament. Thus we covenant and engage with each other, in dependence on the grace of Christ to enable us to fulfill our covenant."

It appears from this paper that the original members of this church were persons of sound minds, of correct views, and of a Christian temper. They left the churches, with which they had been connected, with the entire approbation of those churches, and with the most kind feelings towards them, and sought to establish a church of their own from good and worthy motives: "for the greater convenience of attending gospel worship and ordinances," for their mutual edification, and for the honor of Christ. Such was the spirit in which the foundations of this church were laid; and thanks be unto God, that same spirit has been in it through all the days of its history, down to the present time, and lives in it still.

On the same day on which the church was formed, three men, Moses Ford, Jabez Turner, and Timothy Andrews, were received as members by a profession of their faith. And so the little church began its course with fifteen members; six men and nine women. And if they were all in circumstances of comfort, none of them were rich in the things of this world.

The original members of the church had met for worship on the Sabbath with some of their neighbors, for some time before the church was formed. Their first place of meeting was either in the school-house, or in a building near the school-house, in the south-west district, near the house of Mr. Gibbs Gilbert. But after they had met there for a while, it was proposed to change the place of meeting, and to meet in the future at the house of Captain

Mix, which stood on the Hamden Plain Road, a short distance north of the spot where the Methodist Church now stands. It was proposed to make this change in the place of meeting for the better accommodation of some who wished, or might be induced to attend it. It was thought and argued by some, that the house of Capt. Mix was more central, and would better accommodate the majority of those who wished to attend the meeting, than the other place. And a vote was passed to change the place of meeting, and to meet in the future at the house of Capt. Mix. But this vote was not unanimous. It gave great dissatisfaction to some and met with strong opposition. As soon as it was passed, Mr. Caleb Alling, who was a leading man among those who were opposed to the vote, arose in the meeting, and said, "I give notice that hereafter my own house will be open on the Sabbath for public worship; and I invite you all, or as many of you as sympathize with me in regard to the vote that has just now been passed, to meet me there next Sabbath, and on Sabbaths following." And they did. A separate meeting was established at the house of Mr. Alling, and was regularly conducted and sustained by him, for many years, and until a short time before his decease. Thus we see that the little band of Christians, who first contemplated the formation of a Christian church here, were divided, and thus diminished and weakened, even before the church was formed. But those who were in favor of meeting at the house of Captain Mix, met there; and, in due time, as we have seen, were organized into a church. They continued to meet at Captain Mix's until their first house of worship was completed. The erection of that house was commenced some time in the year 1793, before the church was formed, and finished, probably, in 1795. It stood precisely where the Methodist church now stands. It was a cheap and unsightly building, having but few attractions. And, for many years at least, there never was any fire in it. The people assembled there in the coldest weather, without a spark of fire. And it stood in a

very cold, bleak place. If the wind blows anywhere, it is sure to blow on Hamden Plain.

But while the church had a house of worship, which answered their purpose, and satisfied them, though it would not by any means satisfy the present generation, so much has the world moved since then, they had no pastor. They met, however, for worship on the Sabbath. Sometimes they had a minister, and sometimes they had none. And when they had no minister, their services were usually conducted by Mr. Abraham Alling, one of their own number; who, from his superior natural gifts, and somewhat superior education, seemed to be fitted to be the leader of this little band of Christians. He led them in their prayers, and also in their singing, and read to them printed sermons or discourses composed by others, though sometimes, after a while, he ventured to deliver them a discourse written and composed, partly or wholly, by himself. After continuing in this way for about two years, they extended a call to Mr. Alling, who was then in the forty-fourth year of his age, and living on a little farm three miles north-west of the church, to become their pastor. The call to Mr. Alling was unanimous; but in consequence of his objecting to the salary offered to him, as being insufficient, some members of the church, or of the society, which was formed a few few months before the church was organized, were dissatisfied and withdrew, and joined the meeting of Mr. Caleb Alling, already spoken of. Here was another division to weaken and trouble this little company of Christians. Mr. Alling at length withdrew his objections to the salary offered to him, accepted the call, and was ordained as the First Pastor of this church, on the 19th day of October, 1797. He continued in office for a period of twenty-five years, or until the 22d day of October, 1822, when he resigned his charge, and was dismissed at his own request.

Mr. Alling was born in Stamford, Dutchess County, State of New York. When he was sixteen years of age he came to this town to live with an uncle, who resided here at that

time. At the age of eighteen years he made a profession of religion, and united with the Fair Haven Church, in the city of New Haven. When he came here, he came with the expectation of receiving a collegiate education, but being interrupted in his studies, as were many others, by the Revolutionary war, he did not enter college. He married, and settled on a farm in the west part of this town. He was one, and a leading one, of the little company that formed this church. After serving them, as one of them, and in a private capacity, for about two years, he became their pastor in the year 1797, being then in the forty-fourth year of his age. He served them in the pastoral office for a period of twenty-five years, when he was dismissed at his own request. During all these years of his ministry he continued to reside on his farm and labored, more or less, with his own hands for the support of himself and his family, as his salary, for much of the time at least, was altogether insufficient for their support. He remained on the same spot after his dismissal, and until the day of his death. He died July 22, 1837, at the advanced aged of 83 years. His grave is in the cemetery on Hamden Plain. A simple stone, erected by this church, shows the passing traveler where his body lies, and is a token of the respect and affection with which he was remembered by the former people of his charge. For many years he seems to have been a prosperous and happy man. But his last years, like those of many aged ministers, were clouded with sorrow. Some, who had been his friends, and members of his flock, forsook him and turned against him. He resigned his charge in very unpleasant circumstances, leaving the church, over which he had watched so long, divided and broken. He lost all, or nearly all, of the little property which he had possessed, and became very poor. But in the gospel which he had preached to others, he found comfort in sorrow, as well as support in death. Mr. Alling was above the ordinary stature, of good personal appearance, of pleasing manners, and an interesting preacher. He was very much respected and

beloved, not only by the people of his charge, but also by the ministers and churches of the neighborhood. His abilities, as a preacher, were highly respectable. I am told that not only his own congregation, but also the people of other congregations, to whom he preached occasionally, were always glad to see him enter the pulpit. His success as a preacher appears the more remarkable when we consider his circumstances, and his lack of a thorough education. Mr. Alling was particularly distinguished for his happy manner of officiating at funerals. It is said that his prayers and exhortations on such occasions were remarkably appropriate and impressive. But while he was a man of a sympathetic nature, and could be solemn and pathetic when circumstances required him to be, a little incident, related to me by his son-in-law, the late Dea. Lyman Ford, of this church, shows that he had a vein of humor in him. He was accustomed to ride to church, a distance of three miles, and often on horseback. As it has been remarked already, there was no fire in the church at any season of the year. On one Sabbath, which was an extremely cold day in the middle of winter, Mr. Alling rode to church as usual. The preacher and the people were almost frozen at the beginning of the service. After the usual services before the sermon, which were very long, Mr. Alling arose in the pulpit to deliver his discourse. He took for his text the latter part of the 17th verse of the 147th Psalm, "*Who can stand before his cold?*" His sermons were usually very long, as the sermons of that day generally were; but this time he preached longer than usual, and finally closed his discourse somewhat abruptly as follows: "Dear Brethren, I should be glad to say much more on this deeply interesting subject; but," wringing and rubbing his hands, "*who can stand before his cold?*"

During the ministry of Mr. Alling, seventy-one persons were added to the church by profession, and ten by letter; total eighty-one. For many years the church increased and prospered under his ministry. But at length a great and

sore calamity befel it, which threatened its very existence. A case of discipline which was brought before the church, and in which, as is quite common in such cases, the pastor was accused by some of being partial, was the occasion of much unpleasant feeling, which finally resulted not only in the dismissal of the pastor, but also in a most painful division of the church and society, and in the establishment of another church and society within the bounds of this.

For a period of sixteen years after the dismissal of Mr. Alling, the church was destitute of a pastor. In the Autumn of 1833, fifteen persons were added to the church by profession ; and in the spring of 1836, under the ministry of the present pastor, but previous to his settlement, eighteen were received by profession, and two by letter. And during the sixteen years between the dismissal of Mr. Alling and the settlement of the present pastor, sixty-five were added to the church by profession, and fifteen by letter ; total eighty. It is a curious fact, and one which, perhaps, is worth mentioning, that during the sixteen years to which this part of the discourse refers, this church heard the gospel from about 240 different preachers ; and among them were some of the most distinguished ministers the country has ever produced. The immediate predecessor of the present pastor in the preaching of the word here, was the late Rev. Doctor Nathaniel W. Taylor, of New Haven, who, as a mental and moral philosopher, theologian and preacher, had few superiors or even equals in this or any other age or land. Dr. Taylor, I think, supplied the pulpit here for about eighteen months.

It remains to be noticed, that it was during this period of the history of the Church, while the church was without a pastor, that this house of worship was built. It was erected in the spring and summer of 1834. The first meeting in it was held in the Lecture Room, May 25th, of that year. The building cost \$2,400, and a part of the money was collected from churches and individuals of other towns. In the erection of this temple of the Lord, the Rev. George

E. Delavan, who labored here for a season in the work of the gospel ministry, was very active and largely influential. The peculiar qualities of mind and heart by which he was distinguished, seemed to fit him most admirably for the enterprise, and he threw his whole soul into it. There is reason to believe that but for him the church would not have been built when it was ; and, perhaps, never where it was. It is true that others labored heartily with him ; among whom, first and prominent, was Dea. Eli Dickerman ; and without them he could have done nothing. But he was evidently the leading spirit in the work. Mr. Delavan began his labors here May 1, 1833. On the 19th of June following, he was ordained in the Old Meeting House as an Evangelist. I think that he hoped one day to become pastor of the church. But that hope, if he had it, was not realized. He continued his labors with this people from May 1, 1833, until the house of worship, which had been built so largely through his instrumentality, was completed ; and then, August 24, 1834, in the language of Dea. Elias Bassett, recorded in the church records, "he bade an affectionate farewell to this church and finished his ministerial labors here."

It is known to some of the older persons, that there was a painful difference of opinion, as there often is in such cases, between the members of the Church and Society, as to the location of this house of worship. Those who lived on Hamden Plain and in the west part of the town, wished, very naturally, to build the new church on the site of the old one, where the Methodist Church now stands ; while those who lived in this part of the town wished to build it here. It was finally decided to build it here, and here it was built. But those who lived near the old church, or many of them, were very much grieved ; just as those who lived in this vicinity might have been in the same circumstances. And it may be a question whether it was wise to build the church here. There were two great arguments for building it here ; one was, that if it were located here,

it would accommodate Whitneyville; and the other was, that it would accommodate persons living on the East Road who belonged to churches in Fair Haven and New Haven, but who would, probably, join this church, if the house of worship were built here. But time showed that neither of these arguments was as forcible as it was thought to be by those who employed them. Whitneyville proper has not increased much, and it has never contributed very much to the support of this church and society.

The present pastor of the church was installed on the 31st day of October, 1838. The church at that time was small and feeble. It consisted of about seventy-five members, some of them very young and some of them absent. And the church was divided. There was a most painful division in consequence of the change in the location of the house of worship already spoken of. Some of the most worthy and influential families in the church, living on Hamden Plain and in the west part of the town, were so much grieved about the change of the place of worship from Hamden Plain to Whitneyville, that they had never come here to worship, and they never expected to, and the church had no idea that they ever would.

The growth of the church, during the last forty-eight years, has not been rapid, but it has been steady and healthy. During these years we have enjoyed, repeatedly, glorious seasons of refreshing from the presence of the Lord, which we shall remember with joy and gratitude to God forever. In these seasons of revival, Christians have been greatly strengthened and comforted, and many sinners have been converted and gathered into the church. And between these seasons our Sunday School, and all our regular meetings, both on the Sabbath and on other days, have been sustained without interruption, the good spirit of the Lord has always been with us, Christians have grown in grace and in the knowledge of our Lord and Savior Jesus Christ, and some sinners have been converted and added to the church. So that our number now is more than double

what it was forty-eight years ago. And it is important to remember that our growth has not been in consequence of any great increase of population around us, for there has been no such increase. It is believed that there are not many more people living in this part of the town, or within a mile or two of the Whitneyville church now, than there were in 1838. Nor has our growth been by accessions from other churches. We have given to other churches many more than they have given to us. Most of the young people who have grown up here and joined the church have left us. And many who have gone out from this little church have been bright ornaments and rich blessings to other churches and burning and shining lights in other places. Our loss has been their great gain. One of our number has represented us for nearly twenty years, and most nobly, on the Foreign Missionary field. And not only have individuals left us, but many whole families, on which we once greatly relied, and who were a tower of strength to this church, have moved away or been broken up and scattered. Where, for example, are the Fords, and the Gilberts, and the Bassetts, once so numerous and so strong among us? They are nearly all gone. Nor has our growth been the result of foreign aid or occasional and spasmodic efforts. No Evangelist or itinerant preacher has ever preached a sermon here in all these years. Our Sunday School, commenced in the Old Meeting House under the superintendence of that most excellent and worthy lady, Mrs. Jonathan Mix, and which was so small and feeble for many years, has lived and grown, and is now in a flourishing condition. Our choir, through all these years, and under only four different choristers, and without any salary or pecuniary compensation, have kept together and sung together in harmony not only with musical signs, but also with one another and the spirit of God.

The two first deacons of this church, Moses Ford and Joseph Benham, died before the present pastor was settled. And since his settlement, five deacons, Lyman Ford, Eaton

Bassett, Eli Dickerman, Elias Bassett, and Darius Webb, have died. They were all good men and true. They had different gifts; but they all loved the church with a warm and ardent affection, and did much for it in their day. In their removal from the world the church sustained a great, and as it seemed at the time, an irreparable loss. But God, who is ever mindful of his people, has been pleased to raise up others to take their places. The time was when it seemed to some that the church could hardly exist without Deacon Ford. And truly he was a burning and shining light, and, for many years, a tower of strength in this temple of the Lord. But Deacon Ford died and the church lives. And we shall die, but the church will live. For the source of its life is not in man but in God.

During this period of our history our house of worship was rebuilt at an expense of about ten thousand dollars. We have a commodious, pleasant, and attractive house of worship, and we owe no man anything but love. And it may be proper to observe here that the great mercy of God to us as a people, was most wonderfully manifested in the rebuilding of our house of worship.

I have said that as a society we owe nothing. And I would say in this connection, that the affairs of our society have always been managed in a most admirable manner; and this has contributed not a little to the prosperity of the church. Our expenses have been comparatively small. Our singing has been altogether gratuitous, and the salary of the pastor has always been small, smaller, probably, than that of any pastor in the vicinity; for eighteen years it was \$500 a year and the new parsonage; then, for some years, it was \$700, and finally and now \$900. But if our expenses have been comparatively small, they have always been promptly met. The pastor has always been satisfied with his salary, and whenever his people have changed it, as they have done several times, they have always made it more instead of less, and this they have done entirely of their own free will and without any solicitation or sugges-

tion from him. And he has never had to ask or wait for his money. What his people have agreed to pay him they have always paid promptly, and, as he believes, cheerfully.

Our contributions for religious and benevolent objects, though never large, have increased very much in these years, as the following report of our contributions in the first year of my ministry will show. We reported our contributions then from October to October, because the annual meeting of the Consociation, with which we were connected, was held in October, and we were expected to report our contributions at that meeting. And our contributions from October, 1838, to October, 1839, were as follows:

For the American Tract Society,	- -	\$3.16
For the American Seaman's Friend Society,		1.25
For the American Education Society,	-	3.75
For the American Home Missionary Society,		4.55
For the American Bible Society,	- -	3.00
For the American Board of Foreign Missions,		40.00
Total,		<u>\$55.71</u>

And in the same year, and in each year for several years afterwards, we received \$80 from the American Home Missionary Society, to aid us in supporting the gospel among ourselves. For all these objects we give now more than twice as much as we did then; for some of them seven times as much; for some of them ten times as much, for some of them twenty times as much; and we receive nothing from the Home Missionary Society.

Two brave and noble young men, who had been connected with this church, Thomas McCartey and George Henry Mimmack, one an Irishman, and the other an Englishman, laid down their lives for their adopted country in the war of the Rebellion.

The original members of this church were twelve in number; three men and nine women. There have been added to it 358 by profession, and 158 by letter; total, 516. The whole number who have been connected with the church is

528. The present number of members is 170, [and July 19th, 1886, 190.]

The name by which our society is known in law is Hamden East Plain; and the church was known by that name so long as its house of worship stood on Hamden Plain. But since we met here we have been more generally known as the Church of Christ in Whitneyville.

In the Centennial year, 1886, in July, the number of pews in the church was 64; annual income, \$1,200. The Sabbath School had 220 scholars; teachers, 21; officers, 6; total, 256. Five Bible classes. The choir averaged 20 voices. The choristers in the last fifty years were: Lyman Ford, Horace Lord, James M. Payne, Charles P. Augur.

GRACE CHURCH (PROTESTANT EPISCOPAL.)

REV. H. L. EVEREST.

The parish of Grace Church was organized at Mt. Carmel in the year 1790, and its limits were confined strictly to that district. Religious services were at first held at the private residences of its members, but, probably during the year 1795, a small church, 44 feet by 34 feet, was erected. Several years passed, however, before this building could be supplied with pews, a pulpit and other suitable furniture.

Grace Church, like almost all new parishes of that period, was unable for a time to secure the full services of a clergyman, and so for many years it depended mainly on lay services. The regular lay reader, Mr. Amasa Bradley, was assisted occasionally by Mr. Ezra Bradley and others. Yet from the date of its organization we find that clerical ministrations were not infrequently rendered. At first these services were given monthly, then more frequently, until a clergyman was engaged to officiate every other Sunday in the year. For a long period Cheshire was depended upon for such clerical aid; and the Rev. Dr. Bronson, Rev. Reuben Ives and Rev. Asa Cornwall, at that time residents of Cheshire, officiated often in the Mt. Carmel Church.

An amusing circumstance connected with those early days seems worthy of mention. The Rev. Asa Cornwall having officiated on a certain Sunday in Grace Church had occasion to pay a parochial visit to some family in the western part of the town. While returning home a conscientious tithingman came out and arrested him for "traveling on the Sabbath day." Mr. Cornwall having explained the nature of the work in which he was engaged, the officer apologized, and the good parson proceeded on his way.

In June, 1818, legal measures were taken for extending the limits of the parish so that it should include the whole town of Hamden. This step was followed by a movement towards building a new church in the center of the town. Accordingly, in January, 1819, a new and larger church building was commenced at Centerville, and completed probably during 1820, or early in 1821. The old church edifice and grounds were sold and the proceeds applied towards the payment of the new building. The new church was consecrated by Right Rev. Bishop Brownell, October 14th, 1821.

For a term of fourteen years from this date it would appear that Grace Church did not secure the services of a resident rector. Various clergymen residing in New Haven and elsewhere assumed a temporary charge, the parish record recording the names of Rev. Reuben Ives, Rev. Peter G. Clark, Rev. John W. Garfield, Rev. Gurdon S. Coit, and Rev. Messrs. Potter and Walter. It is also an interesting fact that for nearly one year the Rt. Rev. Thomas Brownell, at that time a resident of New Haven, supplied the parish with Sunday services. In the year 1835 the Rev. John H. Rouse was called to the charge of the parish and became the first resident minister. He remained two years and was succeeded by Rev. Henry Fitch, who continued his rectorship for six years, resigning on Easter, 1843. This same year the Rev. Charles W. Everest was elected to the rectorship. Finding the salary inadequate to a support, Mr. Everest, with the consent of his parishioners, soon after

opened a boarding school for boys, and for thirty-one years maintained charge both of Grace Church and The Rectory School. Mr. Everest resigned as rector of the parish in April, 1874, having had full charge of the church during this long period with the exception of one year (1846-47), when he officiated in St. John's Church, North Haven.

The church building, which had fallen into disrepair, was repaired and generally improved, in 1847, at an expense of about \$1,000. No further alterations worthy of mention were made until 1874, when new seats were placed in the church and the interior of the building refitted. Other substantial improvements have from time to time followed.

Since the year 1874 the following clergymen have been in charge of Grace Church: Rev. Ephraim Whitcombe, Rev. Joseph Brewster, Rev. Heman R. Timlow, Rev. J. E. Walton, Rev. Henry Tarrant, and Rev. A. B. Nichols. The Rev. Wm. B. Walker, at that time a member of the Berkeley Divinity School, officiated as lay reader for one year. The present rector is Rev. W. L. Everest. The following named wardens and vestrymen were elected at the annual parish meeting, May 7th, 1886:

Wardens.—George W. Bradley, Jesse Cooper.

Vestrymen.—Russell H. Cooper, John T. Henry, A. J. Doolittle, Bela A. Mann, Charles Dickerman, George L. Clark.

Within a few years past Grace Church has been the recipient of liberal benefactions from these persons: Mrs. Mercy Bassett, Mrs. Cynthia Bradley, Mrs. Sophrona Tuttle, Mr. Levi Bradley, Mr. Stirling Bradley, Mr. Jesse M. Mansfield.

The "Trustees of Donations and Bequests for Church Purposes" have in charge the sum of about \$4,000 belonging to Grace Church parish. "Blessed are they that sow beside all waters."

HAMDEN METHODISM.

DAVID MACMULLEN.

About 1810 Sybil, wife of Amasa Tuttle, moved from Derby to Hamden. She was a member of the M. E. Church, and there being no Methodist society in Hamden, she united with the newly established organization in New Haven, and soon was instrumental in persuading the pastor and some of the members of that church to hold meetings in Hamden. Mr. Tuttle was not then a professor of religion, but his hearty co-operation furthered the plans of his wife, and an upper room was provided for regular services.

The first class was formed December 27, 1813, and placed under the leadership of Eli Barnett; the following names were enrolled: Sybil Tuttle, Amos Benham, Ruth Benham, Timothy Andrews, Sybil Andrews, Rebecca Dorman and Isaac Benham. The interest taken in the regularly held meetings resulted in a revival in the summer and fall of 1814, during which there were about forty conversions. The accessions rendered it necessary to secure a more suitable place of worship. This was done, the house being a dwelling then belonging to Amasa Tuttle.

The earliest available record (1816), shows Hamden to have been included in Durham circuit, which was divided in 1825, part of it being incorporated with the Wethersfield circuit and another part attached to New Haven; the latter in 1826 was separated from New Haven, and constituted a two weeks' circuit bearing the name of Hamden. In 1827 part of the Stratford circuit was added to the Hamden, and another addition from the Saybrook circuit was made in 1829. In the same year Hamden seems to have been absorbed by the Saybrook circuit, but in 1830 the consolidation was reconsidered, and Hamden was restored to its former status of a two weeks' circuit. These numerous divisions caused a considerable fluctuation in the numerical reports of the circuit. The numbers claimed were in 1826, 144; in 1827, 233; in 1828, 600; in 1829, 300; in 1830,

230; in 1831, 266; in 1832, 256; in 1833, 282; about which time Hamden became a conference station.

The first church edifice proper was erected upon land deeded September 11, 1819, by Ruth Benham to Abner Wooding, Timothy Andrews, Isaac Benham, Amos Benham and Timothy Andrews, Jr., in trust. This building was for a few years used in an unfinished state. On March 28, 1834, Merritt Alling, Charles Wooding, Rufus Dorman, Ezra Alling, 2d, and Jesse Alling were appointed a committee on the building of a new church edifice. Their efforts resulted in the building of the house which preceded the one now in use, which stands on the site of the old Congregational church, and was dedicated on Christmas day, 1834. Its cost was about \$2,300, not all of which was immediately paid. The old church property was sold and converted into a dwelling.

The first parsonage was built in 1838, Orlando Starr being its first occupant. Part of the church debt was paid in 1840, and the residue in 1847, during the pastorate of George L. Fuller. In 1867, Benjamin Broomhead offered land upon which to build a new parsonage. Some were disposed to accept, but others opposed the measure. Meantime an opportunity to purchase a house was presented and improved. The house was secured, the old one sold, and a partial payment made on the new investment. C. W. Powell first occupied the present parsonage, which, during the pastorate of L. Richardson, was paid for in full, thus making the society entirely free of debt on its property.

It is impossible to speak accurately of the spiritual life and work of the church in its earlier days. Little of an extraordinary character seems ever to have transpired within its bounds. Its growth has been steady but slow. It has met with some vicissitudes, chief among which may be named a Millerite controversy in 1843, which, however, soon subsided in the withdrawal of some who persisted in that delusion.

During the pastorate of Joseph Frost, preaching at Cen-

terville, by Hamden pastors, was established, and a class was formed there April 27, 1846. Separate services at Centerville were attempted by T. A. Lovejoy, but after a trial of one year the old plan was resumed.

Revival influences have at various times touched Centerville, Warnertown and other outlying localities. In the church, proper, several revivals have brought great blessing and resulted in large accessions to the membership, notably those during the pastorate of Frederick Brown, the joint pastorate of George P. Mains and C. W. Gallagher, and the pastorates of J. B. Merwin and N. L. Porter.

The Sunday School has had slow but constant growth. For more than a quarter of a century Jared Benham was superintendent. After this long and faithful service, at the beginning of the pastorate of David MacMullen, spring of 1884, Mr. Benham, having declined re-election, was succeeded by Abner Warner, who, after two years of service, was followed by Clifford Munson, the present superintendent.

During the pastorate of John S. Haugh (1876), the church building was remodeled into its present tabernacle form, and a chapel added, the entire expense being fully met.

The last Conference statistical report gives the following figures :

Church members and probationers, 225 ; Sunday school, scholars, teachers, and officers, 180 ; valuation of church building, \$10,000 ; valuation of parsonage, \$3,000. All property in good order and free from debt.

The following is the list of the pastors with their terms of service, since Hamden became a conference station, in 1834 :

Thomas Bainbridge,	1834-1836
Abraham Francis,	1836-1837
Orlando Starr,	1837-1838
Daniel Right,	1838-1839
Ira Abbott,	1839-1840
William S. Stillwell,	1840-1842
A. S. Hill,	1842-1843

Charles Stearns,	1843-1845
Joseph Frost,	1845-1847
George L. Fuller,	1847-1849
Charles Bartlett,	1849-1851
T. A. Lovejoy,	1851-1853
B. Bedford,	1853-1855
B. Leffingwell,	1855-1857
W. H. Russell,	1857-1859
D. W. Lounsbury,	1859-1861
W. P. Estes,	1861-1863
Frederick Brown,	1863-1864
J. Field,	1864-1866
C. W. Powell,	1866-1868
Elwin Warriner,	1868-1869
George P. Mains,	1869-1871
Samuel M. Hammond,	1871-1873
Lemuel Richardson,	1872-1873
Henry A. Van Dalsem,	1873-1874
John Rippere,	1874-1876
J. S. Haugh,	1876-1878
J. B. Merwin,	1878-1881
Nelson L. Porter,	1881-1884
David MacMullen,	1884-1886

HAMDEN, July 28d, 1886.

SAINT MARY'S ROMAN CATHOLIC CHURCH.

In September, 1852, the first mass was celebrated by Father Matthew Hart, in the dwelling house of the late Parsons Ives, which stood near the present residence of Jesse Cooper. At that time there were about thirty Catholics in the town, and five resident Catholic families, mass being celebrated about once a month at their residences. In 1856 ground was purchased for the erection of a church edifice through the efforts of Father E. J. O'Brien, who officiated once or twice a month for some time, being pastor of St. Mary's in New Haven.

After Father O'Brien, came Father John Sheridan, pastor of the Church of the Holy Trinity, Wallingford; and next Father McAllan, from the same church. Father Thomas Drea was Father McAllan's successor, and was pastor of St. Thomas Church in Southington, also having the care of

the parish at Cheshire and at Mt. Carmel. Then came the present pastor, Father Hugh Mallon, who assumed the charge August 11, 1867, in addition to his duties at the Church of the Holy Trinity in Wallingford. In the autumn of the same year an extension of 25 feet was made to the rear of the church building, at which time the number of Catholics in the parish had increased to 225. In 1883, in a census taken by Father Mallon, he found 530 Catholic residents in his parish. Father Mallon continued in his labors at Wallingford and Mt. Carmel without assistance until 1878. Father Patrick Fox was then appointed to be his assistant and was succeeded by Father James Crowley, who was followed by Father John Crowley, the present assistant.

Mass had been celebrated not more than three times a month previous to the coming of Father Mallon, who commenced weekly celebrations, which have continued consecutively, with but one or two exceptions, to the present time.

NEW LEBANON MISSION.

The New Lebanon Mission, located in Hamden, near the New Haven line in the southern part of the town, is a mission conducted and supported by the First Church of New Haven.

It was founded in October, 1868, when its services were held in the public school house on Morse street.

In May, 1873, having outgrown its old accommodations, the mission was removed to its own chapel, which had just been erected.

Sunday School services are held every Sunday afternoon, and also one preaching service on each Sunday.

The officers of the mission are Justus S. Hotchkiss, superintendent, and Miss Rebecca Bacon, assistant superintendent.

MILITARY HISTORY.

BY WILLIAM T. SMITH.

THERE are no records of the participation by the early settlers of the region, now included in Hamden, in the Indian and the French wars. Yet we know by tradition that the ancestors of many living in the town bore their share of this duty.

Fifty years ago almost every farmer's family had an old musket, known as one of the "Queen's arms," inherited, and carefully kept, for shooting hawks, crows and squirrels.

One of the earliest of the recorded organizations is that mentioned in the prelude to the Act of Incorporation (page 14)—the Seventeenth Military Company in the Second Regiment of Militia. The boundary lines of the extent of this military company became in part the boundary lines of the town.

It is believed that this company was formed about the year 1770. Barber, in his history, page 225, gives the following list from the muster roll of the first company organized in the East Plains Society of Hamden. It is stated to be:—"A true roll of the 17th company, or trainband, of the Second Regiment in the Colony of Connecticut, under the command of Col. Edward Alling, Esq., Test, Charles Alling, clerk of said company.

MUSTER ROLL: SEVENTEENTH COMPANY.

Stephen Ford, *Captain*; John Gillis, *Lieutenant*; Elisha Booth, *Ensign*; Charles Alling, *Clerk*; Samuel Cooper, Hezekiah Tuttle, *Drummers*; Caleb Alling, Moses Gilbert, Joseph Gilbert, Moses Ford, *Corporals*; Zadock Alling, Amos Alling, Medad Atwater, Abraham Alling, Ebenezer A——, ——, Bassett, ——Ball, ——Bradley,

——— Bassett, Timothy Cooper, Dan Carrington, Hezekiah Dickerman, Jonathan Ford, Stephen Ford, Nathaniel Ford, Daniel Ford, Michael Gilbert, Gregson Gilbert, Lemuel Gilbert, Daniel Gilbert, Ebenezer M. Gilbert, John Gorham, Amos Gilbert, Sackit Gilbert, Nathaniel Heaton, Jr., John Hubbard, Jr., ——— Hemberston, John Munson, David Munson, Nathaniel Munson, John Manser, Jabez Munson, John Munson, Jr., Job Potter, Abel Potter, Timothy Potter, Levi Potter, Stephen Potter, Thomas Potter, Jr., Amos Potter, John Roe, Abel Stockwell, Thomas Wm. Talmadge, Daniel Talmadge, Jr., Gordain Turner, Japhet Tuttle, Josiah Talmadge, Israel Woodin, Silas Woodin, *Privates*.

This company hurried to the defense of New Haven at the time of its invasion by the British forces under Major General Tryon, July 5, 1779, and lost six of its members, besides having several wounded. The killed were: Captain John Gilbert, Michael Gilbert, Samuel Woodin, Silas Woodin, Joseph Dorman and Asa Todd. Most of them were killed near the west end of Broadway by a charge of grape shot from the enemy. Timothy Bassett was severely wounded and was supposed to be killed, but he lived for years after, though a constant sufferer from the wound.

The records of New Haven no doubt contain further information regarding the service of residents of Hamden in the War of the Revolution, but, as the town was not set off until after the close of the war, their names are recorded as from New Haven.

WAR OF 1812.

From a book containing the roll of the 17th company, 2d regiment, kept by Capt. Leverett Tuttle, and now in the possession of his son, Mr. Henry Tuttle, we find the following named members of the company, and residents of Hamden, who were drafted during the war of 1812-1815:

Thomas Mix, Joseph Warner, Ebenezer Mansfield, Daniel Little, Ezekiel Dorman, Edmund Dorman, Lyman Dorman,

Ira Cooper, Daniel Ashton, Timothy Andrews, Jr., John Potter, Harvey Bradley, Lyman Mansfield, David Smith, Merrit Blakeslee, Isaac Jones, Lyman Munson, Dearing Munson, Jared Benham, Eli Humiston, Jason Bassett, Levi Baldwin, William Peck, David Warner, Philo Curtis, Nathaniel Turner, Andrew Hopkins, Samuel Whiting, Joseph Ball, John Babcock, Matthew G. Blakeslee, Zenas Mix, James Atwater, Stephen Atwater, Ezra Cooper, David Smith, Lyman Mansfield, Daniel Austin, William Maynard, Joseph Warner.

There is no record of the service of these men, whether they survived the war or not.

In this war when it became necessary to strengthen and add to the fortifications of New Haven harbor, the adjoining towns were called on for assistance. One hundred men went from Hamden to help throw up earthworks on Beacon Hill, the defense known as Fort Wooster. They were under the command of Captain Jared Whiting, and according to the Journal of October 4, 1814, they labored with great industry and were saluted and cheered by the citizens of New Haven on their return from the works.

WAR OF THE REBELLION.

Of the sons of Hamden engaged in the War of the Rebellion the records of the town contain almost nothing, either as regards the quota assigned the town, or the men who enlisted to fill such quota. From the "Catalogue of Connecticut Volunteers," published by the State, we find accredited to the Town of Hamden, two hundred and sixty-four (264) men; but we are unable to determine who were actual residents of the town, and who came from other places, attracted by the offer of large bounties. Of this number twenty-six (26) died in service, thirty-five (35), most of whom were substitutes or professional bounty jumpers, deserted; the remainder received honorable discharges. The names of all are given by company and regiment as follows:

<i>Second C. V.</i>			<i>Fifth Infantry, C. V.</i>	
Fred. S. Francis,	Co. D		William Roberts, deserted,	Co. A
			John Lamb, deserted,	G
<i>Third C. V.</i>			<i>Sixth Infantry, C. V.</i>	
Frederick Berger,	Co. B		Andrew Frey,	Co. C
John F. Hinman,	B		Gustave Frey,	O
Joseph Miller,	B		William F. Smith,	F
George Andrews,	C		John Miles (sub.),	G
Charles T. Wade,	C		John Smith (sub.),	I
			Merritt L. Potter,	K
<i>First Cavalry, C. V.</i>			John H. Cook,	K
Phillip Doeppenschmidt,	Co. B		Charles W. Cooper,	K
William F. Smith,	B		Andrew Dorman,	K
John Hunter,	F		Stephen P. Joice,	K
William Jones, deserted,	F		Elias H. Rogers,	K
John Peterson,	G		Artemas Tousley,	K
Edward Atkinson,	K		John J. Warner,	K
William Hancock,	K			
Ed. H. Tyler, died,	K			
Charles Moore,	L			
Franz Sandval,	L			
William Clark,	M			
<i>First Artillery, C. V.</i>			<i>Seventh C. V.</i>	
John C. Knight (sub.),	Co. B		Benjamin C. Woodin,	Co. F
Julius P. Kalsling (sub.),	B		Charles F. Alling,	G
Owen Keegan,	B		George W. Malone,	G
Charles Johnson, died,	C		Francis Russell,	G
Thomas Hines (sub.),	D		John Rourke (sub.),	K
Albert J. Scott,	E			
John Boyle, deserted,	E		<i>Eighth C. V.</i>	
Olaudius A. Bailey,	F		Nelson E. Carrington,	Co. A
Charles L. Morse,	F		Henry Crosby (sub.),	A
Julius Johnson, deserted,	F		John Williams (sub.),	A
Darwin K. Brown,	F			
Edward King, deserted,	F		<i>Ninth C. V.</i>	
Jedediah Safford,	F		James Hayden,	Co. B
Hiram Curtis, deserted,	G		John Mulligan,	B
Daniel Osborn, deserted,	G		Francis Hoey,	B
Thomas Brennan, deserted,	I		Burnett Murray, deserted,	D
John Fitzpatrick,	I		Daniel Farrell,	E
Eli Starr,	I		John Sullivan, died,	E
Isaac V. Warner,	L		Francis Rousel,	F
Thomas Connelly (sub.),	M		Andrew Ryan,	F
<i>Second Artillery, C. V.</i>			<i>Tenth C. V.</i>	
Augustus Hain,	Co. C		Benjamin S. Pardee,	Co. A
John J. Harrover,	H		Ezra Dickerman,	A
James W. Weaver, deserted,	I		Willis W. Dickerman,	A
George Alexander, deserted,	L		William H. Freeman,	A
Thomas Butterfield, deserted,	L		Charles W. Grannis,	A
James Hart, deserted,	L		James Griffin, died,	A
John Keeler, deserted,	L		Harmanus Sanford,	A
John O'Brien, deserted,	L		Andrew B. Todd,	A
John Ragan,	M		Charles A. Warner,	A
William Ryan, deserted,	M		John Peters (sub.), deserted,	D
Julius Zimmer, deserted,	M		Daniel N. Joice,	K
			John Stewart (sub.), deserted,	K

<i>Eleventh C. V.</i>			
Thomas W. Drew (sub.), deserted,	Co. A	William Lowe,	I
John Hadley,	B	William O. Mix,	I
Richard Healey,	B	John H. Russell,	K
Samuel E. Johnson,	B	Frank Peconi,	K
George O. Masse, died,	B		
Henry Smith (sub.), deserted,	B	<i>Eighteenth C. V.</i>	
Joseph Binder, deserted,	O	Henry S. Bugbee, deserted,	Co. I
Jacob Guttman,	O		
Charles Miller,	D	<i>Twentieth C. V.</i>	
James Messin, killed,	D	Henry Curnow,	Co. A
John Smith,	E	James Ely (sub.), deserted,	A
Joseph Wood, died,	E	Jacob Hudnite (sub.),	F
August Miller,	F	Henry L. Alling,	G
Alfred Adoux,	G	Harvey M. Alling,	G
John Brown,	H	George C. Hitchcock,	G
William Johnson,	H	Cecil A. Burleigh,	I
Samuel Keffer,	H	Robert E. Paddock,	I
James Ellis (sub.),	I	Willis A. Bradley,	I
Adolph Pierre, died,	K	Samuel V. Beckwith,	I
Joseph Bernard, deserted,	K	Asahel C. Austin,	I
Robert Handley, died,	K	William Beach,	I
John R. Handley,	K	Joel C. Dickerman, killed,	I
Frank Silva, missing,	K	Alfred Martin,	I
		George M. Brown,	I
<i>Twelfth C. V.</i>		Charles V. Stillman,	I
Richard I. Howard, deserted,	Co. B	Mark E. Dickerman,	I
		Bradley Allen,	I
<i>Thirteenth C. V.</i>		Burton S. Bradley,	I
Edward Stone,	Co. A	John H. Bradley,	I
William Flaherty,	B	Francis C. Barrows,	I
Norman Hotchkiss,	B	William H. Bailey,	I
George Donnell,	G	Charles T. Bailey,	I
George M. Alling,	H	George M. Clark,	I
Julius H. Dorman,	H	Henry F. Cook,	I
James A. Malone,	H	John E. Calkins,	I
		Hobart B. Doolittle,	I
<i>Fourteenth C. V.</i>		Howard B. Dorman,	I
Charles B. Wilson,	Co. G	John H. Fahey,	I
John Garvey, deserted,	K	Michael Hussey,	I
		Brainerd T. Ives,	I
<i>Fifteenth C. V.</i>		William Johnson,	I
James Anderson,	Co. A	Franklin Johnson,	I
John Buckley,	A	Julius S. Merwin, deserted,	I
George Burke, deserted,	A	Bernard Mulvey, killed,	I
Michael McCormick, deserted,	A	James Mezin,	I
Edward Birmingham,	B	Elihu Moulthrop,	I
Dennis Duckett,	B	Zenas Nash, deserted,	I
Bart Fecci,	C	Orrin A. Root,	I
Pedro Bozart, died,	E	Augustus Rannes,	I
Henry Girard,	E	John Reilly,	I
Hans Losen,	E	Joshua Smallman,	I
William W. Owens,	E	Edward Smallman,	I
William Walkor,	E	George Smith,	I
Pat. Burke,	G	Curtis Tuttle, died,	I
Adam Hoffman,	I	Isaac V. Warner,	I
John Thorman,	I	Louis Danner, died,	K

<i>Twenty-fourth C. V.</i>			
William M. Barbour,	Com. Seg't	Phillip Jones, Jr.,	H
Richard Cronan,	Co. H	Andrew Seaman,	H
Thomas A. Dowling,	H	Henry Williams, died,	H
Alonzo Mabbet,	I	James W. Brewster,	I
Jesse B. Gilbert,	I	Lawson Alexander,	I
Lorenzo L. Goodyear, died,	I	George Havelow,	I
Wallace R. Warner,	I	Joseph Humphrey,	I
Charles E. Allen,	I	William Smith,	I
Lyman I. Goodyear, died,	I	John Tibbitts,	I
Albert B. Candee,	I	Lewis H. Williams,	I
Hobart Wooding, died,	I	George Simmons, deserted,	I
George Harlow,	I	James Williams,	K
Lyman Warner,	I	<i>Thirtieth C. V.</i>	
Albert M. Ives,	I	Spencer Berdan,	Co. C
Edwin R. Whiting,	I	George Jackson,	C
Noah W. Alling,	I	<i>Unassigned Recruits.</i>	
Edgar D. Ives, killed,	I	John Burns,	
Andrew Peck, died,	I	Joseph Burnett,	
John Murphy,	I	William Burk,	
Ansel J. Deolittle,	I	John Donnelly,	
Jerome H. Payne,	I	Patrick Doland,	
Arthur Ashton,	I	Thomas Henry,	
Julius Curtis, died,	I	Henry Horiser,	
David Cowell,	I	Peter Haggerty,	
Edwin H. Fenton,	I	James King,	
Gardner F. Goodyear, died,	I	James Kelly,	
Marshall Gaylord, died,	I	Charles H. Leland,	
William Lowry, deserted,	I	Henry S. Lansdale,	
Harvey Merriman, killed,	I	Isaac McKensy,	
Noyes Merriman,	I	Robert McGregor,	
Thomas McGuire,	I	Patrick Roberts,	
Horace Pierpont, died,	I	Michael Sullivan,	
Michael Shannon,	I	Patrick Smith,	
James M. Williams,	I	Henry Tubbs,	
<i>Twenty-seventh C. V.</i>		Thomas Williams,	
Frank Kraw,	Co. K	Richard Biffin,	
William Vanderbrake,	K	Patrick Kenney,	
<i>Twenty-ninth C. V.</i>		John Smith,	
John W. Williams, killed,	Co. B	James Lawton,	
John W. Gross,	D	Peter Fox,	
Jacob Trusty,	D	John Kelly,	
John H. Ashley,	F	John Hoyt,	
Henry Camper, died,	F	Henry Peebles,	
John Dennis,	F	Isaac W. Vogel,	
Alexander Higgins,	F	Miles Burke,	
Joseph R. Sills,	F	Michael Eagan,	
James Jackson,	G	Henry Van Durgan,	
		George Johnson,	
		Richard Watson,	

George Bird, colored, now a resident of the town, also served throughout the war, chiefly with the Army of the Potomac.

To write the record of the services of these men would

be to write a history of the war. They were in all the principal military operations of the war, except in the extreme west. They were in the Army of the Potomac, from Bull Run to Appomatox, and in North Carolina under Burnside. They were among the first to tread the rebellious soil of South Carolina. They were found in the Department of the Gulf; at Chattanooga and on the "March to the Sea." They did their duty nobly as soldiers of the Union, some of them giving their lives for their flag and country. Hamden sent them to represent her and to fight her battles for her. What has the town done for them? Search throughout the town and nothing can be found to tell their story, or to commemorate their deeds. It would seem eminently proper that the town should take some action, to show its gratitude, and to hand down to future generations a record of the patriotism and fidelity of its sons.

EXTRACTS FROM THE TOWN RECORDS.

THE first volume of records containing a copy of the Act of Incorporation consists chiefly of a record of the annual and special town meetings and the votes passed at those meetings, with full lists of the Selectmen and other officers chosen. It appears to have been the only volume for miscellaneous records, as we find in one portion of it a list of the freemen admitted; a record of marriages and births; records of the various brands used by the inhabitants for their cattle, horses and sheep; records of the impounding of cattle, sales of estrays, etc., etc.

The Proprietors' records of the town, especially for the first thirty years or more, give abundant evidence of the pastoral pursuits of the people. There are numerous records of the marks of stock held by various residents. Most of these marks were not by branding, but by cropping or perforating the ears; for example: "Alfred Dorman's mark is a square crop of the left ear;" "Sherman W. Gorham's mark is three holes the under side of the right ear;" "Wilbert Thomas' mark is a hole in the left ear."

The binding and leaves of the first volume having become much worn, and the text in danger of obliteration and loss, the Centennial Executive Committee caused it to be carefully transcribed.

As much of the space is taken up by the ordinances from year to year relating to the roaming of cattle, swine and geese upon the highways and commons of the town, and by other minor details of the town government, it was deemed unadvisable to print the whole contents of the book, and selections of only the more interesting and important items have therefore been made.

FIRST MEETING OF THE TOWN AFTER THE INCORPORATION—
ELECTION OF OFFICERS.

At a meeting of the inhabitants of the town of Hamden, pursuant to an act of the General Assembly holden at Hartford on the 2d Thursday of May, Anno Domini 1786, holden at said Hamden the 3d Tuesday of June, 1786, Simeon Bristol, Esq., moderator.

Voted, That Simeon Bristol, Esq., be town clerk for the remainder of the present year.

Voted, That Messrs. John Hubbard, Asa Goodyear, Samuel Dickerman, Moses Gilbert, Simeon Bristol, Esq., be Selectmen of this town for the remainder of the present year.

Voted, That Samuel Humiston and George A. Bristol be constables of this town for the remainder of the present year.

Voted, That Messrs. Samuel Humiston, John Hubbard, Thos. Mix, Joel Ford, Saml. Dorman, Amos Bradley, Caleb Doolittle, Hezh. Bassett, Medad Alling, Joseph Johnson, be surveyors of highways for this town for the remainder of the present year.

Voted, That Messrs. Jonathan Dickerman and Stephen Ford be fence viewers for the remainder of this year for this town.

Voted, At the meeting aforesaid, that Messrs. Saml. Bellamy, Jonathan Ives, Jr., Benjn. Gaylord, Jr., Stephen Goodyear, Job Todd, Medad Atwater, Abm. Alling, Stephen Todd, Samuel Hummiston, Benjn. Wooding, Joel Goodyear, be listers for this town for the present year.

Voted, That Messrs. Joseph Benham and Joel Hough be leather sealers for this town for the present year.

Voted, That Messrs. Samuel Atwater, Jr., James Bassett, Jr., Amos Peck, Alvin Bradley, be Grand Jurors for this town for the remainder of the present year.

Voted, That Messrs. Sacket Gilbert, Danl. Talmage, Jr., Calvin Mallary, Elisha Atwater, be Tythingmen for this year for the town aforesaid.

Voted, That Danl. Bradley and Eli Bradley, be Sealers of Weights and Measures for this town for the remainder of the present year.

Voted, That Messrs. Timothy Potter, Asa Goodyear, Ebenr. Beach, Caleb Alling, Benn. Gaylord, Jr., be Key Keepers for this town for the present year.

Voted at the meeting aforesaid that Messrs. Simeon Bristol, John Hubbard, Thos. Goodyear, Isaac Dickerman, Elisha Booth be a committee for the purpose of dividing the town stock, poor, etc., with the town of New Haven.

Voted at the meeting aforesaid that swine be suffered to go at large, being ring'd and yok'd from this date until the 10th of Decr. next.

Voted, That an annual town meeting be held in this town on the second Monday of Decr. in each year and that all future meetings of this town be warn'd, except meetings held by adjournment, by a written Notification thereof specifying the time and place of such meeting, set upon the Sign post and two Extreme Taverns in the Society of Mount Carmel and one such Notification at one public House on the road at the East and West Farms or Plains signed by the major part of the Selectmen for the time being at least five days before such meeting.

The foregoing Votes were passed at the aforesaid town meeting.

Test,

SIMEON BRISTOL, *Town Clerk*.

SPECIAL MEETING—TAXES, HIGHWAYS, ETC.

“A special meeting of the inhabitants of the town of Hamden” was “legally warned and convened on the 16th day of November, A. D. 1786, Dr. Elisha Chapman was chosen Clerk of said meeting pro tempore and sworn.” “Baszel Munson, Esq., was chosen moderator, and George

Augustus Bristol, Collector of "Taxes that are or may be laid by the State on the List for the year 1785." It was voted that "the Selectmen for the time being be impowered to divide the highways into regular districts and the same set out and assign to the surveyors and the inhabitants living within the same. "Jabez Bradley was chosen surveyor of highways in the room of Amos Bradley, who refuses to serve."

The annual meeting of the town, held on the 11th day of December, 1786, was adjourned "to Monday, the 18th day of December instant at 12 o'clock." At the adjourned meeting "Messrs. John Hubbard, Samuel Dickerman, Moses Gilbert, Theophilus Goodyear and Abraham Alling were chosen Selectmen for the year insuing," and Jesse Goodyear was chosen Treasurer. It was voted that "this town tax themselves 4 d. on the Pound for defraying the necessary Expense arising upon this town for the year ensuing." "Also, that Mr. John Hubbard be Collector of the above rate, and that as a reward for that service he receive out of the town treasury the sum of Ten Pound S. M." [Sterling Money].

HIGHWAYS.

1786. *Voted*, The selectmen for the time being be impowered to divide the highways into regular districts, and the same to set out and assign to the several surveyors and the inhabitants living within the same.

Voted, That this town provide timber and plank for the purpose of building a bridge over a brook near the dwelling house of Capt. Gill.

DIVISION OF TOWN BURDENS OF HAMDEN AND NEW HAVEN.

1787. *Voted*, That this town, taking into consideration the number and extent of the bridges within the same; the numerous roads, length and extreme badness thereof, are of opinion that the same are our full proportion of burdens of that kind lying upon the town of New Haven

previous to our separation, that we will therefore take no further burden except the same be affixed upon us by the committee appointed by the Honorable General Assembly.

Voted, That this town will pay and discharge all arrearages of State taxes due from the poor inhabitants thereof previous to our separation from the town of New Haven, which have not been abated nor can be collected, provided the towns of New Haven, East Haven and North Haven will do the same for the poor inhabitants of their respective towns.

CONSTITUTIONAL CONVENTION.

1787. At a meeting of the town of Hamden, on the second Monday of November, 1787, pursuant to a recommendation of General Assembly of this State, in their session in October last, to choose a delegate to represent this town in a convention, to be holden at Hartford on the first Thursday of January next, to take into consideration the constitution recommended by the late convention of the United States at Philadelphia.

At the meeting aforesaid the question was put, whether this town approve of the aforesaid constitution?

Voted, In the negative—Yeas 5, nays 73.

At the meeting aforesaid, Mr. Theophilus Goodyear was chosen to represent this town in the convention, to be holden at Hartford, on the first Thursday of January next.

Attest, SIMEON BRISTOL, *Clerk*.

PLAINS AND EAST FARMS HIGHWAY.

1787. December. *Voted*, That Messrs. Simeon Bristol, Samuel Atwater, Bajzet Munson, Esq., be a committee to join the selectmen of this town to view the places proposed by the inhabitants of the Plains and East Farms for the purpose of a highway and make report of their opinion thereon to the next town meeting.

INOCULATION FOR SMALL POX.

1788. March. The question was put whether liberty shall be given to Docts. Aaron and Joseph Eliot to set up a Hospital for the purpose of Enoculation for the small pox at the dwelling house of John Hubbard, Esqr., under such restrictions and regulations as shall be prescribed by the civil authority and selectmen of this town. Voted in the negative.

STAMPING LEATHER.

Voted, That the capital letters H G be stamped on such leather as they judge to be sufficiently tanned.

OPPOSITION TO SECESSION.

At a meeting of the town of Hamden, May 6, 1788, Capt. Samuel Atwater was chosen Moderator.

Whereas Capt. John Gill and others, inhabitants of this town, have preferred their memorial to the General Assembly to be holden at Hartford on the second Thursday of May instant, praying to be annexed to the town of North Haven. *Voted*, That this town will oppose said memorialists and the matters contained in said memorial so far as the same affects this town.

APPRAISAL AND SALE OF ESTRAYS.

1789. December. Upon application of Amos Basset of Hamden, Capt. Moses Gilbert and Lieut. Samuel Hummiston were appointed to apprise the stray creatures in custody of said Basset and one creature in custody of Joel Ford described as per record, which creatures had been in their custody for 6 months past.

1790. Jan. 4. Capt. Moses Gilbert and Lieut. Samuel Hummiston made return under this date of the appraisement of the above creatures as follows: (viz.)

1 Cow in custody of s ^d Basset, at.....	£3 2 s 0 d
1 " " " ".....	1 16 s 0 d
	<hr/>
	£3 18 s 0 d
1 Calf in custody of Joel Ford, at.....	1 8 s 0 d
	<hr/>
	£5 1 s 0 d
Amos Basset exhibited an acct. for keeping 2 cattle and other ex- penses allowed.....	£3 15 s 0 d
Joel Ford exhibited an acct. for keeping one calf and other ex- penses allowed.....	1 0 s 4 d
	<hr/>
	£3 15 s 4 d
Balance due the Treasurer of the Town of Hamden.....	£1 5 s 8 d

WOODBRIDGE BOUNDARY LINE.

1792. January. Voted that the Selectmen be empowered by themselves or a committee of their appointing, to settle the line between the town of Woodbridge and this town either by agreement or submitting the same to judicious arbitrators.

TOWN HOUSE.

1793. Jan. 7. Voted, that Messrs. Thio's Goodyear, Simeon Bristol, Moses Gilbert, Joshua Munson, Alvan Bradley, and Samuel Bellamy be a com'tee for the purpose of procuring subscriptions for building a Town House.

WORK HOUSE.

1795. January. Voted, That the honorable Court of Common Pleas for the County of New Haven be requested to call a meeting of the civil authority in the several towns of this county, to consider of the expediency of building and supplying a Work House for the benefit of the County.

SUPPORT OF THE POOR.

1795. September. Voted, That Simeon Bristol, Isaac Dickerman and Caleb Alling be desired to join the Selectmen of this town and with them confer, consult and report a plan for the more easy and comfortable support of the poor of this town, with their opinion upon that subject to the next annual town meeting.

ORDINANCE RESPECTING GEESSE.

A by-law made by s'd town of Hamden at the meeting aforesaid warned for that purpose: Be it ordained by said town of Hamden in lawfull meeting assembled, that when any goose, geese or geese kind shall be found in any enclosure except that of the owner or owners thereof not yoked with good and sufficient yokes, each part or piece thereof being at least 15 inches long, it shall be lawfull for person finding said goose, geese or geese kind in his or her enclosure to take the same into his or her custody and keeping, giving notice thereof as soon as may be to the owner or owners thereof if known, and if such owner or owners after notice given as aforesaid shall neglect to appear within four days and pay to the person or persons holding said geese or geese kind 4 cents per head, also all just damages done by said geese and cost of keeping, said geese shall be forfeited to the person holding the same in custody. * * * *

TOWN LINE.

Voted, That Samuel Bellamy be agent for this town to prefer a petition to the Hon'bl General Assembly, to be holden at New Haven in October next, to straiten the line between the town so as to conform to the original petition for an act to incorporate this town.

1797. January. Jesse Gilbert was chosen agent to prefer a petition to the General Assembly, to be holden at Hartford in May next, to straiten the south line of this town.

HIGHWAY.

1801. Shall the highway proposed by Deacon Stephen Goodyear and others be laid out beginning at the old highway near Mr. Jesse Jones' house, from thence to Cheshire road near Mount Carmel meeting house. *Voted* in the negative.

HARTFORD TURNPIKE AND CHESHIRE TURNPIKE.

1803. For votes relating to these two turnpikes, see the chapter on Public Works.

TOWN POOR.

1805. *Voted*, To take into consideration whether we will remove our town meetings, or build a town house, or remain as we are.

1806. *Voted*, Resolved that three auditors of town accounts be appointed, whose duty it shall be to examine into the state of the finances of the town ; to fix upon a specific method of keeping town accounts, and in conjunction with the selectmen to make report to the town at the adjourned meeting on the 7th of April next.

Eli Whitney, Esq., Amasa Bradley, John Hubbard, Esq., were appointed auditors agreeable to the above vote.

CONSTITUTION FOR STATE OF CONNECTICUT.

1818. At a town meeting, held by adjournment, in Hamden January 5, 1818, Amasa Bradley, Esq., moderator. *Voted*, Resolved that the representative of this town in the next General Assembly be, and he is hereby requested, to use his influence that measures be immediately taken for forming a written constitution of civil government for the State of Connecticut, and that the town clerk furnish said representative with a certified copy of the foregoing resolution.

1818, July. At a meeting of the qualified voters in town and freemen's meetings, legally warned and held in Hamden, Amasa Bradley was chosen presiding officer. Russel Pierpont was chosen Delegate to meet in convention at the State House, in Hartford, on the fourth Wednesday of August next, for the purpose of forming a constitution of civil government for the people of this State.

PRESIDENTIAL ELECTORS.

1820. At a meeting of the electors of the town of Hamden, legally warned and held for the purpose of choosing electors of President and Vice-President of the United States, Jared Bassett, Esq., was chosen presiding officer.

PHYSICIAN TO BE INVITED TO SETTLE IN THE TOWN.

1821. *Voted*, That the Selectmen be requested to invite some able physician to settle in this town.

FARMINGTON CANAL.

1822. At a special town meeting held April 1, 1822, warned on account of the canal from New Haven to Farmington, Amasa Bradley, Esq., moderator, it was voted to adjourn this meeting without day.

1827. *Voted*, That Joel Ford, Esq., as agent for said town [Hamden] and Allen Dickerman, Alfred Bassett and Michael Leek, selectmen of said town, be directed and fully authorized to request the Farmington Canal Corporation to locate and put in immediate repair the public highways in said town which has [have] been taken in consequence of said canal and also to make convenient bridges for public travel, and if said corporation refuse and neglect to locate and put in good repair said roads and bridges as aforesaid, said agent and selectmen be directed and proceed as they think proper to bring any suit against said corporation or individual and them oblige to make such roads and bridges as they are required by law.

IMPOUNDING HORSES AND CATTLE.

1830. *Voted*, That if any horse or horse kind be found going at large on the highways or commons in the town of Hamden the year ensuing, it shall be the duty of the Haywards and lawful for any other person to impound the same, and the fees for impounding shall be eighteen cents each, one-third to the pound keeper and the other two-thirds to the impounder.

1832. January. *Voted*, That all neat cattle, horses and mules be restrained from going at large on the highways and commons within the town of Hamden the ensuing year under a penalty of eighteen cents per head for neat cattle, and twenty-five cents for horses and mules, each ; one-half to the impounder and the remainder to the pound keeper, and it shall be the duty of the Haywards, and lawful for any freeholder, to impound any cattle, horses or mules so going at large.

1834. At a special town meeting legally warned and held Decr. 15, 1834, for the purpose of providing an Alms House, or work-house, for the town poor, Joel Ford, Esq., was chosen Moderator. *Voted*, That the Selectmen be requested and empowered to purchase a situation at the expense of s'd town for the purpose of converting it to a house of correction for the accommodation of the poor of s'd town and all those who shall become disorderly, in consequence of which it shall be thought necessary to place them under the management and control of the keeper of said house, but if considered by the selectmen not proper, or expedient, at the present time, to contract with some suitable person or persons to support the poor of s'd town for such term as they, the Selectmen, shall deem desirable.

THE POOR OF THE TOWN.

BY C. P. AUGUR.

WE find by the act of incorporation that careful provision was made that the inhabitants of the new town of Hamden should "take upon them the charge and support of their part of the town poor of said town of New Haven in proportion as aforesaid."

Our ancestors were careful to prevent any undue accession to the numbers of the town poor by providing that when any transient person, "without any visible means of support," came within our borders they were soon warned to "depart the town," by the selectmen, that they might not gain a settlement here.

The poor that really belonged to the town were cared for either by being "set up to public vendue," singly or all together, and bid off to the lowest bidder, or placed with suitable persons, under the direction of the selectmen, as witness the following votes passed at a town meeting held Dec. 11th, 1815: "*Voted*, That if any person shall appear to bid off all of the aforesaid town poor for a less sum than they shall amount to singly, they shall have the privilege; all under the care and direction of the selectmen."

"*Voted*, That whoever shall bid off the whole of the town poor for the ensuing year, shall be required to give a bond with sureties to the selectmen in the sum of \$1,500, conditioned that the poor, so bid off by him, shall be provided and furnished with comfortable food, clothing and

lodging, and fire wood during the time for which he undertakes to support them."

TOWN FARM.

In December, 1834, a committee was appointed to "investigate and report on the feasibility of purchasing a place for an almshouse, where the poor of the town could be kept."* And from that time until Feb. 15th, 1850, other committees were appointed for the same purpose nearly every year, but no definite action was taken until the latter date, when the Tuttle farm was purchased for the purpose, and so used until 1861, when it was sold, and the Brooks' farm, the present town farm, was occupied as such, it having been willed to the town by Mr. Enos Brooks, subject to a life lease of his wife, Mrs. Roxana Brooks.

The will stipulated that the income of the farm "should be applied to the maintenance of the roads and bridges of the town," which stipulation has been complied with on the part of the town.

Soon after the town took possession of the farm, the selectmen compromised with Mrs. Brooks by paying her a certain sum annually during her life, and it is a somewhat remarkable fact, that, after being away from the place nearly twenty years, she was brought back to her old home, where she died in the fall of 1880, and the town erected a suitable monument to her memory.

New buildings were erected on the farm by the town at an expense of some four thousand dollars, and the present accommodations are deemed ample for the comfort of the inmates, who are always under the care of a competent superintendent and matron.

The farm is situated in the extreme northern part of the town, and contains one hundred and eighteen acres of land.

The average number of inmates for several years has been from ten to twelve.

*See extracts from Records, 1834.

The streets of New Haven already extend to and over the southern border of the town. The town line lies directly across the Prospect street ridge, and crosses the middle of the reservoir of the New Haven Water Works. The north ends of Prospect street, of Winchester Avenue, of Shelton Avenue and of Dixwell Avenue, are within the town limits. So, also, are the following named streets: Goodrich, Marlboro, Morse, Arch, Beaver, Warner, Burke, Dix, Connel, Dudley, Allen, Edwards, North, Armory, and Mill Rock streets.

This advancing wave of population already entails special care and expense upon the town. At present, the greater number of the incomers are persons of extremely moderate means, and many of them are, or soon become, paupers and a burden to the town.

According to the census returns of 1880, the population of some of the chief centers, or villages, in the town of Hamden, was approximately as follows; the limits of the villages not being sharply defined:

Augerville,	63
Centerville,	191
Hamburg,	477
Ivesville,	474
Whitneyville,	196

The following table, taken in part from the census reports, direct, and in part from the Connecticut Register and Howe's History of New Haven, shows the number of inhabitants in the town at the end of each decennial period from 1790 to 1880 inclusive, and the population of New Haven for the same year. It is evident that the increase has not been great. The growth of the town in inhabitants has been slow. The population in numbers is not three times as great as it was in 1790, while in New Haven the number is about fifteen times as great as it was in 1790. It shows the centralizing attraction of cities. New Haven is now growing more rapidly than ever before, and the indications are strong that the town of Hamden will soon begin to fill

HISTORICAL AND DESCRIPTIVE.

up rapidly from the overflow of the city population. ~~the~~ horse railways contribute somewhat to the increase of the population of the suburbs of the city, and when they become sufficiently powerful and far-sighted to surmount the small natural obstacle of the Mill Rock trap dyke, there will be a rapid expansion of population upon the high plains beyond it.

YEAR.	POPULATION.	
	OF HAMDEN.	OF NEW HAVEN.
1790	1,422	4,448
1800	1,482	5,157
1810	1,716	6,697
1820	1,687	8,327
1830	1,666	10,678
1840	1,797	15,820
1850	2,164	22,529
1860	2,728*	39,277
1870	3,028	50,840
1880	3,408	62,880

*According to Census Report, 2,708.

SOCIETIES.

DAY SPRING LODGE—MASONIC.

DAY Spring Lodge, No. 30, F. and A. M., was instituted by virtue of a Warrant granted May 15th, 1794, by the Most Worshipful Grand Lodge of the State of Connecticut, to the following named petitioners: Samuel Bellamy, George A. Bristol, Amasa Bradley, Tully Crosby, Ezra Kimberly, Levi Tuttle, Leverett Kimberly, Simeon Goodyear, Job Munson; and the following officers were therein appointed, viz: Samuel Bellamy, W. M.; George A. Bristol, S. W.; Amasa Bradley, J. W.

The Lodge was organized "at a Special Grand Lodge of Free and Accepted Masons, holden at the house of Bro. Samuel Bellamy, at Hamden, on Tuesday, 30th of December, Anno Lucis 5794. Present: M. W. William Judd, G. M.; Peter Johnson, S. W. pro tem.; Trihand Kirtland, J. W. pro tem.; Elihu Sanford, Treas. pro tem.; David Daggett, Sec'y pro tem."

The house of Bro. Samuel Bellamy, where the Lodge was organized, is still in existence, standing a few rods above the Congregational church at Mount Carmel, the old Farmington canal passing just in front, with a few ancient-looking poplars before the house, on the west bank. Here our brethren of "ye olden time" assembled to perform their labors in the solemn rites of masonry.

The minutes of the first communication are as follows: "Day Spring Lodge held agreeable to the Master's order, Monday evening Jan. 12, A. L. 5795. Members present at Bro. Bellamy's: Bro. Samuel Bellamy, Master; Bro. Geo. A. Bristol, S. W.; Bro. Amasa Bradley, J. W.; Bro. Ezra Kimberly, Sec'y; Bro. Job Munson, Treas.; Bro. Simeon

Goodyear, Bro. Levi Tuttle, Bro. Leverett Kimberly, Bro. Luman Frisbie, Tyler. Proposed: Elias Hotchkiss, by Bro. Simeon Goodyear; Jared Goodyear, by our Worshipful Master; they to be initiated the next Lodge evening."

The next communication was held Thursday evening, Jan. 22.

It is recorded that on "June 26, A. L. 5798, the Brethren met, according to adjournment, for the celebration of St. John's day, and convened to the meeting house, where a sermon was delivered by Bro. Balden."

On the 28th day of February, 1805, it was "voted that this Lodge be removed to the house of Mrs. Barber, and that hereafter the Lodge meet at said place."

On Jan. 28, 1813, it was "voted that our stated Lodges be on the Monday preceding the full moon in each month, at five o'clock P. M., except that whenever the moon shall full on Monday, that shall be the day, according to the proposition of Brother Elam Bradley, made last Lodge, Dec. 24, 1812."

At a communication held Dec. 18, 1815, "Bro. Whiting proposed that the Lodge be removed before our next Lodge night." The Lodge voted to remove to the house of Bro. Eliphalet Gregory, and on Jan. 8, 1816, the Lodge met and probably occupied their new room. The house was situated a few rods below the present residence of Dr. E. D. Swift, and was for a time open to the public as a hotel or tavern. The building was destroyed by fire over thirty years ago.

No records of communications appear after May 18, 1829, until May 2, 1836, when a communication was held, at which Bro. Leverett Hitchcock was chosen Master, Dr. C. B. Foote, S. W.; Julius S. Tolles, J. W.; Elam Warner, Treas.; Lewis Goodyear, Sec'y; Leverett Hotchkiss, S. D.; James Wiles, J. D.; Eli Hull, Tyler and Steward. This communication adjourned to "our regular communication in October next;" and this closes the record until the resuscitation of the Lodge, Friday evening, Dec. 2, A. L. 5870.

The Charter of Day Spring Lodge was surrendered to the Grand Lodge, A. D. 1838, by Bro. Leverett Hitchcock. In A. D. 1870, Bro. Norris B. Mix, desiring the re-establishment of Day Spring Lodge, obtained of the following named brethren their signatures for a restoration of the old Charter: Leverett Hitchcock, Roswell F. Stillman, Edwin W. Potter, Norris B. Mix, Gilbert S. Benham, Jesse Cooper, Brainard T. Ives.

In May, 1870, Bro. Mix visited the Grand Lodge at Hartford, and procured the Charter; Bro. Leverett Hitchcock being at this time the only living member in the town.

After reorganizing, the Lodge occupied the room from which it removed to its present location, a little over four years. On the 4th of March, A. L. 5875, Day Spring Lodge came into its present elegant Lodge room, after dedication by the Grand Lodge.

ANCIENT ORDER OF HIBERNIANS.

The Ancient Order of Hibernians is a benevolent organization composed of Irishmen and men of Irish descent. It has branches all over the United States, Ireland, England, and Canada.

The First Division, A. O. H., of Hamden, was organized in 1873. It has fifty-five members, and is in a flourishing condition. The officers are: President, Patrick Maher; Vice-President, Andrew McKeon; Recording Secretary, Thomas Dunn; Financial Secretary, James O'Connell; Treasurer, Michael Kelly.

FAMILY HISTORY NOTICES.

THE following brief genealogical and biographical notices of some of the families and individuals who have been prominently identified with the history of the town, have been prepared in part from the records of the town, and partly from data supplied by living representatives of the families. Application for information was made direct to many of the heads of families, descendants of the early residents and settlers, with a request for genealogical records, and short sketches of family history and traditions, but the responses have been few, and often meagre. Repeated personal solicitation has, however, secured some interesting data which are embodied in the following notices, arranged in alphabetical sequence. Many of these notices are of necessity very incomplete, and many are disjointed; but it is hoped that the facts may be of some value, and that some important genealogical information may in this way be preserved, which otherwise might be lost. Many prominent names are reluctantly, but necessarily, omitted by reason of the absence of any data regarding them.

ALLING.

It has been impossible to procure, in season for this volume, any extended connected history of the Alling family.

ROGER ALLING, from England 1639. Treasurer of the New Haven colony 1661. Deacon of the church 1669-74, d. 16 Aug., 1683. He m. Mary Nash, dau. of Thomas Nash. Five children. Savage names two daughters in addition.

SAMUEL ALLING, son of Roger, b. Nov. 4, 1645, d. Aug. 28, 1707, m. (1) Oct. 24, 1667, Elizabeth, dau. of John Winston, who d. Dec. 8, 1682; (2) Oct. 26, 1683, Sarah dau. of John Chidsey. Eight children. The eldest:

SAMUEL ALLING (2d), b. Oct. 16, 1688, of Davis's Hill, father of Ebenezer, to whom he deeded half of his house on Davis's Hill. (Tuttle book, p. 190.)

EBENEZER ALLING, b. Nov 20, 1712, d. 1764, m. Nov. 1, 1733, Mary Tuttle, b. 1711-12, only daughter of Deacon Joshua Tuttle, November 1, 1733, who afterwards m. Asa Todd.

CALEB ALLING, Selectman 1791-93 and 1797 and 1798. In 1795, at a meeting of those interested in forming a new church organization in Hamden, Mr. Caleb Alling gave notice that his house would be open on the Sabbath for public worship. The names of Charles Alling, Hannah Alling, Abraham Alling and Abigail Alling appear amongst those who formed the first organization of the Hamden Plain Society.

ABRAHAM ALLING, b. in Dutchess Co., State of New York, about 1753, and removed to a farm in the western part of Hamden, about 1769. Pastor of the Congregational Society in Hamden Plain for twenty-five years, d. 1837. For an extended history of life and Christian work reference is made to the article by Rev. Austin Putnam on the Hamden East Plain Society. Mr. Alling is presumably the same who was chosen selectman from 1787 to 1789.

MEDAD ALLING and Nathan Alling, Junr., were admitted freemen in 1787; Asa Alling, freeman, 1812; Lyman Alling, 1815; Samuel, 1817; Ezra, 1818.

BASSETT, OR BASSET.

The name of Basset is well known in British annals, and is prominent in the history of the Landed Gentry of England. According to Burke, the family of Bassett, eminent amongst the baronial houses of England, derives its descent from Thurston Basset, a Norman, to whom the Conqueror

gave the manor of Drayton in Staffordshire. A peerage in this English family became extinct in January, 1855. A Basset was a follower of Somerset, whose quarrel with Vernon, at the coronation of Henry VI., Shakespeare has recorded. One of the Basset family was Lord Mayor of London in the year 1475.

The English orthography of the name is usually Basset. In the earlier records of New Haven Colony it is Bassett, but it is, occasionally, Basset.

At the General Court of New Haven Colony held July 1, 1644, Robert Bassett took the oath of fidelity at the same time with Theophilus Eaton, Stephen Goodyear and Joh: Bassett.

We read of Robt. Bassett, the drummer, in 1645, and later he seems to have made considerable noise and disturbance in the colony in another way—by free speech, of which he may be considered the first shining example in America.

Another member of the Basset family, John Basset, and probably Robert's father, appears to have been a most useful and reliable member of the little community, but was treated in the Record with scant courtesy, for "Old" Bassett and his son were ordered to see the fence belonging to the Neck "well done." Again, in August, 1645, Old Bassett was "desired to sett the great gunnes vppon good carryadges." He died and his will was probated February 17, 1652. His property was divided between his wife and his son Robert.

Robert appears to have become tired of the duties and restraints of New Haven and went to Stamford, where he was ostensibly engaged in preparing an expedition against the Dutch of New Netherlands. He evidently was a strong, independent, and somewhat turbulent, character who made seditious speeches and sought for greater liberty. He exhibited a little too much of the spirit which was so commendable in 1776, a hundred and twenty-three years later, but which did not please the General Court, or the churches, in 1653. The chief ground of Basset's complaint

appears to have been that: "wee haue not our vote in our jurisdiction, as others haue." It was charged that "he would be a reformer not only of comonwealths but of churches also," and that he had undertaken to raise volunteers to go against the Dutch, but really to raise and carry on an insurrection in the colonies. One of his associates, Jeremiah Jagger, had also been "pleading for liberties in votes, that all may chuse officers for publique trust, and chuse whom they please" * * * "saying publicly, in the towne meeting, in discontent, and with a surly spirit, that the court sent to the town for deputies, but they were the churches' deputies, and who must chuse them, the free-men; then saith hee, wee are the bond-men, and so will our children bee, therefore it is time for vs to looke to it."

Basset had acted in a friendly way to Thomas Baxter, who ("by vertue of a comission from Road Island vnder the comonwealth of England") had taken a Dutch boat or vessel, and perhaps had exceeded his authority in other matters, for the Marshall of Connecticut was sent to arrest him, and having seized him, and while leading him away, "Robert Bassett came running after them with his hand vpon his sword, being amazed, as himselfe saith, to heare Baxster was taken, and gave them many offensive words and cariag, affronting them in their way, commanding Lieutent Cooke to put vp his sword." * * * *

He was arrested and disarmed and taken to the house where Baxter was kept, but went away without leave.*

The sum of Basset's offending is more fully set forth in the following extracts from the Governor's communication to the General Court.

November 22th, 1653. — "The Gouvernor acquainted the Court wth a letter he had received wch was sent to Robert Basset without date or name subscribed, which is to stirr vp to stand for the State of England, as they pretend, and to stand for their libberties, that they

*Records of the Jurisdiction of New Haven, 1653.

may all have their votes and shake of the yoake of gouernmt they have bine vnder in this jurisdiction : also wth a letter from the towne of Stamford, makeing complaints of their rates and other greiuances as they pretend ; also another wrighting from Stamford, stirring vp to raise volunteers to goe against the Duch, and that themselves will send forth tenn men well furnished for the war."

* * * * *

At a General Court held at New Haven (Mch. 22, 1653), Robert Basset was called before the Court and interrogated about the "wrightings," which it appears had been "conveyed away." His replies were not altogether satisfactory. "Beside all this, Serjant Bell, one of the Deputies for Stamford, informed the Court that though Robert Basset hath bine a great disturber of their peace in Stamford, at sundrie times in severall meetings, yet vpon the 7th of March last, the day that the deputies were to come to the last court, there being a towne meeting called at Stamford, he carried it worss than ever before (though hee seemed before convinced of his miscarriages and hoped he should neuer so offend againe), for when the towne was come together, Robert Basset stood vp and asked what the meeting was for, Richard Law, the constable, answered, there was a generall court to be at Newhaven and deputies were sent for to go theither ; Robert Basset replied, they would obey no authority but that wch was from the State of England, the constable answered, this authority is the authority of England :—that he denied and said, then let vs have England's lawes, for England doe not prohibbitt vs from our votes and liberties, and here wee are, and wee are cut of from all appeales to England, and wee can [have] no justice here ; further he said they were made asses of and their backes are allmost broke and it is time for them to looke to themselves and to throw their burden of for they shall be made very fooles ; and he spake against the justice of the authority of this jurisdiction ; a repleye being by some in defence thereof, hee said, is that authority just

that makes what lawes they please, executes them as they please, calls for rates when they please, and never so much as give them a reason." * * * *

Hee also said that they were not so much as neighbors, but bondmen and slaves, but that being witnessed against, hee justified what hee had said, saying they must be bond-men or free-men, for their was no medium."

All this was boldly confessed by Basset in open court to be true, except that passage "that they could have no justice here," and he was then informed "that as his course and carriage hath bine full of pride and insolency, himselfe a leader to disturbe the peace both of the churches and commonwealth, nay to overthrowe all foundations laid here for gouernment, wch by oath he stands bound to maintayne and vphold, so he hath discoverd a false rotten spirit (as was lately observed by some of Connecticote in their converse with him, and he told of it in open court.")

* * * *

"The marshall was ordered to put him in prison, and irons vpon him for his better securitye ; but vpon his desire considering the coldness of the season, and the prison-house where is no fire, that they might avoid crueltie, the court left it to ye gouernor, magistrats and deputies of ye generall court at Newhaven to order his imprisonmt whether in ye prison or in ye marshall's house as they should see cause in refference to his health."

But Basset, under great pressure, finally confessed his waywardness, and was partially forgiven. His wife was tried for witchcraft, and his son, Samuel, was one of the first settlers of Derby.

At the time of the division of the First Ecclesiastical Society of New Haven in 1759, five of the name of Bassett are enumerated as members. Of these, James, John and Enos, remained in the First Society, and Eunice and Mary, adhered to, and attended upon the ministry of Reverend Mr. Samuel Bird, and were, with their fellow members, constituted the new White Haven Society.

The name appears amongst the first officers of the town of Hamden. In 1786 Hezekiah Basset was appointed one of the surveyors of highways, and James Basset, Junr., a grand jurymen. In 1788, Theophilus and James were both surveyors of highways, and Amos Basset one of the tything-men. These names are found frequently afterwards in the records as officers of the town. In 1793, James Basset, Junr., was appointed one of the selectmen, and again in 1795, 1796 and 1798. In 1794, John Basset was chosen as a grand juror.

The members of the family of Bassett now living in Hamden do not trace their descent from Robert Basset, the early advocate of free speech and free votes, but from another and parallel source.

WILLIAM BASSETT, m. about 1649, ——— Ives (widow and mother of John and Joseph Ives). Children: John and Samuel, from whom the Bassetts of the old town of New Haven and of Hamden are descended. The name of William Bassett appears in a list of the Freemen of New Haven, October, 1669.

SAMUEL BASSETT.—Will probated May 9, 1716. Amt. of inventory, £1,245, 1s., 6d.

JOHN BASSETT, brother of Samuel, d. Feb. 8, 1713—14. He took part in the great swamp fight with the Narragansetts, December, 1675, as lieutenant and afterward captain. The amount of his estate was about the same as his brother Samuels'. He had a son known as Cornet John Bassett, who was the father of Sarah Bassett, who married James Bassett, her second cousin.

JOHN BASSETT, d. July 11, 1726, æ. 36. Removed from New Haven and built the old house "in the wilderness," which stood a short distance south of the house since built by Hon. Jared Bassett. He died in 1726, July 11, leaving an infant son, James.

JAMES BASSETT, d. 1801, æ. 76, m. Dec. 25, 1754, by Rev. Joseph Noyes, Sarah Bassett, his second cousin, who d. 1823, æ 94 years and 6 months. Children: Abigail, b.

December, 1755; d. 1845, æ. 90. James, d. 1827, æ. 70; he m. Adah Alling (no children). Timothy, d. 1820, æ. 62; Rebekah, d. 1801, æ. 36; John, the father of James and David (father of John E.); Sarah; d. 1856, æ. 92. Abigail and Sarah remained at home with their mother, and after her death lived in the old house, built by John, their grandfather. They were long known in this town as "Aunts Sally and Nabby," and were exceedingly interesting and quaint in their ways, and full of traditional lore of the family and neighbors.

TIMOTHY BASSETT, b. about 1758, d. 1820, æ. 62; m. Eunice Alling. Lived in a house west of the railroad where it crosses Shepherd's brook. Children: three sons, Enos, d. October, 1821, æ. 36; Jared, d. 1855, æ. 66; Alfred, d. 1865, æ. 71. He was a presidential elector in 1836, and represented the town in the legislature at several sessions.

The two brothers, James and Timothy, left their home in Hamden to assist in resisting the British invasion of New Haven July, 1779, and were both wounded. The following interesting account is given by Rev. Chauncey Goodrich, from information obtained from Mr. George B. Bassett: "Each of them had served a term of either draft or enlistment in the Continental Army. Timothy had been under General Gates and had taken part in the battles near Saratoga, which preceded the surrender of Burgoyne, and James had served in New Jersey and Pennsylvania and came home in broken health. On hearing the alarm the young men took down their muskets from hooks which are still to be seen on the walls of the old house, and hurried into town with others from that quarter. They participated in the fight at Ditch Corner and both were wounded, James being hit by a musket ball, which broke his arm, and Timothy being shot through the body. As the last fell, a British soldier stepped forward, and after appropriating whatever on his person was of value was about to inflict a fatal blow, when one of the sons of Joshua Chandler interposed, saying that he was well acquainted with the young man; that they

had often been in pursuit of foxes together, and begged that, as the existing wound seemed likely to prove fatal, no further violence should be inflicted. James reached home on the evening of the same day and reported that his brother had been killed. On the next morning the father came into town in search of Timothy and found that he been carried into a house near where he fell, and was yet living, though in a state of extreme exhaustion. With much difficulty he was conveyed home in the family chair or chaise, and after continuing for nearly a year in a feeble state of health he ultimately recovered, in a measure, although suffering from the effects of the wound through the rest of his life.”*

The brothers, James and David, the sons of John, were well known in Hamden fifty years ago. They were then in the prime of manhood, and each the head of a family. James occupied the house and farm, now the home of James, the son; David lived in the house and place south of Cherry Hill, sold to Mr. Foy, and purchased of Mr. Foy by Mr. Simeon Baldwin, of New York, and sold by his heirs to Mr. Gormley, the present owner. The old house, built after the prevailing Connecticut pattern a century ago, was recently torn down.

JARED BASSETT, b. 1789, d. March 15, 1855, m. Eliza ———, d. Aug. 2, 1854, æ. 58.—Children: Eunice, m. James Mix, of New Haven; Cornelia, now living; Jared, who occupies the old homestead built by his father in 1819, and at that time considered the best in the town.

He was State Collector, and sworn in as constable in 1811, and served for several years. In the record of the town meeting for 1825 we find his name entered with the title of “Esquire,” and that he acted as Moderator of the meeting. He was repeatedly chosen selectman of the town, and he represented Hamden in the State Legislature in the years 1827–28, 1831–32, and in 1836, and was a member of the State Senate in 1833. But to the townspeople of that

*New Haven Hist. Soc. Papers, vol. ii, p. 81.

day, and in the country about, he was known as the "Squire," and no one could have supported the dignity of the office better than he. Of commanding figure and great dignity of demeanor, combined with excellent judgment and irreproachable character, he was most highly respected by all.

The following are copies by Mr. George F. Tuttle, of inscriptions on tombstones in the Hamden Plain (west) Cemetery:

Jared Bassett, d. March 15, 1855, æ. 66; Eliza, his wife, d. Aug. 2, 1854, æ. 58; James Bassett, d. Sept. 2, 1828, æ. 71; Adah, his wife, d. June 6, 1825, æ. 63; James, d. Dec. 15, 1841, æ. 41; Elizabeth, his wife, d. Sept. 5, 1865, æ. 54; Phebe, d. Feb. 5, 1828, æ. 54, wife of John, who d. Aug. 9, 1821, æ. 60.

BENHAM.

According to Savage, John Benham, of Dorchester, Mass., came probably in the ship "Mary and John," in 1630. He was freeman in May, 1631, and removed in 1640 to New Haven. John Davenport, in a letter to Gov. Winthrop, April, 1660, relates how Brother Benham and his wife escaped drowning in fording a swollen river.

John Benham's name appears in a list of Planters of New Haven in 1643. He seems to have given his attention to making brick, for we read in the Records of the Colony, "that whereas the place where John Benham now makes bricks is within the compass of Mr. Eaton's farm, etc."

JOSEPH BENHAM, of New Haven, m. at Boston, Jan. 15, 1657, Winnifred King, and was one of the first settlers of Wallingford, 1670. Twelve children. One of these is believed to be the ancestor of:

JOSEPH BENHAM, m. Elizabeth ———. Adah (daughter of Joseph and Elizabeth), born Aug. 27, 1786.

ISAAC BENHAM, son of Joseph and Elizabeth, b. Aug. 2, 1791, m. March 8, 1815, d. Jan. 23, 1879, æ. 87 years 6 months. Anne, his wife, d. Aug. 2, 1876, æ. 81. Children:

William, b. March 24, 1817; Isaac, b. July 6, and d. July 7, 1821; Betsey Ann, d. July 30, 1846, æ. 18 years 9 mos.; Jared :

JARED BENHAM (son of Isaac), now living just east of the old homestead on the first hill west of the Jared Bassett place.

LUTHER L. BENHAM, d. April 7, 1877. His wife Elizabeth Heaton, d. Dec. 19, 1866, æ. 52. (Tombstone H. P. cemetery.)

AMOS BENHAM, d. Jan. 2, 1839, æ. 61. Ruth, his wife, d. March 29, 1868, æ. 83. (From tombstone H. P. cemetery.)

BLAKE.

The members of the family of Blake who are, and have been, residents of Hamden, are direct descendants of William and Agnes Blake, who emigrated from England to Massachusetts Bay Colony in 1630. These ancestors arrived in the ship "Mary and John," Captain Squeb, and landed at Nantasket, and afterward settled at Mattapan, now Dorchester. The name of William Blake is found upon the same ancient document, in Dorchester, upon which the signature of the ancestor of the Dickerman family is found.* The descendants of the Dorchester stock are numerous. A branch of the family removed to Worcester County, and Elihu married Elizabeth Fay Whitney, a sister of Eli Whitney, and had a family of several sons and daughters.

After Mr. Whitney had established the manufacture of fire-arms in this town he sent to Massachusetts for his nephews, Philos, Eli W., and Elihu, to assist him in the various departments of the manufacture. Each of these members of the family have at different periods resided in the town and have been more or less identified with it. Elihu Blake was made Freeman of the town in 1818, and married here, in 1825, Adeline N. Mix, daughter of Capt.

*See Frontispiece of James Blake's "Annals of Dorchester," Boston, 1846.

Jonathan Mix. Eli W. Blake resided for some years in the village at Whitneyville, and died in New Haven, Aug. 19, 1886. The annexed obituary notice was prepared for, and is extracted from, the *New Haven Journal and Courier*:

"ELI WHITNEY BLAKE was born January 27, 1795, at Westboro, Worcester County, Mass. He graduated at Yale College in 1816. He intended to enter the legal profession and studied law in the then famous school of Judge Gould, at Litchfield, Conn., but gave up that purpose at the request of his uncle, Eli Whitney, who desired his assistance in erecting and organizing the gun factory works at Whitneyville. After the death of Mr. Whitney, in 1825, Mr. Blake and his brother (the late colonel Philos Blake), carried on the business until 1836, when they joined their brother, John A. Blake, in forming the partnership firm of Blake Brothers, and established at Westville a manufactory of door locks and latches of their own invention. This business was afterward extended to include other articles of hardware, such as casters, hinges, etc., most of which were covered by patent. In this branch of manufacture Blake Brothers were among the pioneers in this country, and long held the front rank. It is not too much to say, that the ideas which they originated still characterize the forms of American locks, latches, casters, hinges and other articles of house furnishing hardware wherever manufactured, and are the foundation of their acknowledged superiority.

In the year 1852 Mr. Blake was appointed on a committee to superintend the macadamizing of Whalley avenue, and his attention was thus directed to the great want of a machine for breaking stone into fragments of a nearly uniform size suitable for road making. The problem was a very old one, but no successful solution had ever been effected. Mr. Blake devoted himself to its study for nearly five years, and in 1857, produced and patented the "Blake Stone Breaker," which for originality, simplicity and effectiveness, has justly been regarded by experts as almost

unique. It has since come into general use in all parts of the world for road making and for mining purposes ; and has introduced a new era into both departments of industry. Its value, directly and indirectly, as a labor-saving and wealth-creating agency can hardly be over-estimated. The occurrence of the civil war, however, which retarded its introduction, and subsequent competition by infringers of the patent, greatly interfered with the profits that the inventor should have realized, and the pecuniary reward which Mr. Blake reaped from this and his other inventions amounted in the end to only a moderate competence.

Mr. Blake's abilities and acquirements in the field of mathematical and physical science were of a high order, and he contributed many valuable papers to scientific journals on various subjects. Several of the most important of these which had been recently published in the *American Journal of Science*, together with some additions of a late date were collected by him in 1882 and printed together in a small volume entitled "Original Solutions of Several Problems in Aerodynamics." These papers, which were the result of original research and experiment, treat of the laws which govern the flow of elastic fluids through an orifice ; the propagation of pulses in elastic media ; the mode of expansion of elastic fluids ; and the velocity and transmission of sound. The final paper and perhaps the most elaborate of all, covering many printed pages of close scientific and mathematical discussion, was written by him when far advanced in his eighty-seventh year. The originality and value of Mr. Blake's investigations in this and other subjects, and also his ability and general merit as a physicist, were recognized by scientific authorities at home and abroad, and drew from his alma mater, Yale, in 1879, the honorary degree of L. L. D. He was one of the founders, and for several years the president, of the Connecticut Academy of Arts and Sciences.

In 1821 Mr. Blake united with the Center Church in New Haven, and for over sixty-five years was identified with its growth and prosperity. In 1822 he married Miss Eliza O'Brien, of New Haven, whose self-sacrificing fidelity and devotion in all the relations of wife and mother brought unbroken domestic happiness to him and his household until her death in 1876. Seven of their children survive him. Few men have more worthily enjoyed the reverence and affection of their families and friends, and to few have these been rendered in larger measure. His name was synonymous with integrity. His benevolence was like a fountain, active, spontaneous and overflowing. The poor were always in his thoughts. He was considerate and liberal as well as just in all business transactions. He took a deep interest in public affairs, and was the outspoken supporter of civil and social progress and virtue. The later years of his life were spent in peaceful retirement in the midst of his family circle attended "by all that should accompany old age, as honor, love, obedience and troops of friends." In that quiet retreat his mind in its strength and serenity diffused perpetual sunshine. Men of intellect and culture sought him to enjoy the wit and wisdom of his conversation. Little children, whom he dearly loved, delighted to throng about him; and none could enter that benignant presence without feeling how truly "the hoary head is a crown of glory, when it is found in the way of righteousness."

BRADLEY.

In 1649 William Bradley, who had been a major in the Parliamentary Army and a friend of Cromwell, went from New Haven about eight or ten miles north and commenced the settlement of North Haven. The name is well known in the ancient records of the colony, and is common in the records of the town of Hamden for the past century.

ALVAN BRADLEY was selectman in the years 1788 and 1789, and frequently after. Jabez Bradley was one of the

selectmen in 1789 ; Amasa Bradley in 1796 and 1797, and from 1802-1805. He was also chosen Moderator at the town meetings for several years, from 1807 onwards, as late as 1824. He was styled Captain, and, also, Esquire. At the first meeting of freemen in 1786, Levi Bradley was admitted freeman, and in 1787, Eli, Amasa, Jabez, Jr., and Dan'l Bradley, Jr., were admitted freemen of the town of Hamden.

Not having been able to obtain any account of the early history of the family, or any connected record, the following disconnected extracts from the first volume of records are all that can be presented :

ALVAN BRADLEY, 2d, m. Abigail Hall, Feb. 3, 1800. Children : Albert, 1801 ; Emeline, b. 1803 ; Edmund D., 1806.

AMOS BRADLEY, b. —, m. Olive ———. Children : Amos, b. Nov. 14, 1781 ; Olive, b. May 20, 1786 ; Lois, b. Dec. 24, 1788 ; Lenna, b. June 23, 1790 ; Sephronia, Jan., 1793 ; Asa, March, 1796 ; Chloe, July 15, 1797, Jotham, June, 1799.

DAVID BRADLEY, a member of the Congregational Church at Mt. Carmel, prepared himself for Yale College and entered there, staying but a few months before being called to work as a missionary. In 1828 he was ordained as a Baptist clergyman and presided in the north and west parts of the town.

HARVEY BRADLEY, d. Oct. 15, 1861, æ. 69 ; Eliza, his wife, d. Aug. 17, 1835, æ. 40. He was a well known resident of the town forty or fifty years ago. He lived, and had a store, a few hundred yards north of the Plains Methodist meeting house, and just south of the former residence of Jesse Gilbert. Philo, his son, resides on the Cheshire road nearer New Haven.

BRISTOL.

The following notes are taken from the Town Records :

SIMEON BRISTOL, Esq., one of the selectmen, 1786, and town clerk from 1786 until 1801, b. May 18, 1739, m. Mary ———, b. Dec. 1, 1736. Children : George Augustus, b.

July 27, 1762 ; Simeon, July 26, 1764 ; Mary, Oct. 15, 1767 ; Sarah, Aug. 20, 1771 ; John, Dec. 10, 1775 ; William, June 2, 1779. Then follows the record of the birth of Cyrus, a male negro child, son of Rose, a female slave of Simeon Bristol, Nov. 8, 1795. Town Records, Vol. I.

CHATTERTON.

DANIEL CHATTERTON, m. Oct. 14, 1788, to Deborah Morgan ; d. 1793.—Children : Adah, b. Nov. 12, 1789, d. January, 1790 ; Aaron, b. May 15, 1791 ; Deborah, Oct. 9, 1793 ; m. 2d., Abigail Morgan, Aug. 24, 1794. Chosen selectman, 1811, 1812, 1813.

Captain Chatterton had a saw-mill on Shepherd's Brook for several years.

DICKERMAN.

The Dickerman family, prominent in the annals of Hamden, is descended from Massachusetts stock in the town of Dorchester. Thomas Dickerman appears to have been one of Mr. Mather's company, who came from England in 1635, and died in Dorchester, Jan. 11th, 1657. His widow, Ellen, afterwards married John Ballard, of Medfield. The name of Thomas Dickerman appears, amongst those of other male inhabitants of Dorchester, in 1641, appended to an instrument conveying to the town of Dorchester all rents and profits of Thompson's Island, for the support of a free school. It is written in a bold, clear style. A copy of it may be seen in the lithographed frontispiece of James Blake's "Annals of the Town of Dorchester." Thomas had two sons, "Abram" and Isaac.

ABRAM DICKERMAN, b. ———, d. Nov. 2, 1711 ; m. Mary Cooper Dec. 2, 1658. Resided in New Haven. Six daughters and two sons : Sarah, Hannah, Ruth, Abigail, Abram, Isaac, Rebecca. Mary m. Samuel Bassett, June, 1677.

ISAAO DICKERMAN (son of Abram), b. Nov. 7, 1677, d. September, 1758 ; m. Mary Atwater. Was Deacon of the New Haven Church, "First Society," and had title of captain and esquire.—Children : Isaac, Samuel, Ruth, Jona-

than, Stephen, Mary, Rebecca, Abigail. He joined the White Haven Church April 2d, 1754, not being satisfied with the preaching of Rev. Joseph Noyes. As a token of affection he gave to the First Society, or Church, a pint silver cup with two handles, marked on the bottom with the capital letters I^A_R to be used by the church in remembrance of the donor.

SAMUEL DICKERMAN (son of Isaac), b. March 4, 1716, d. ———; m. 1739, to Mary Alling. He was a large farmer in Hamden. — Children: Isaac, Sarah, Mary, Samuel, James, Rhoda, Chauncey, Jane, Ruth, Susannah, Lucy.

SAMUEL DICKERMAN (2d), b. 1745, d. October, 1789; m. in 1773, to Lowly Pardee. — Children: Levi, Samuel, Hannah, Chloe, Polly, Miles, Lowly. I assume that this is the Samuel Dickerman who was one of the selectmen in 1786 and 1787. The death of "Samuel Dickerman," Oct. 7, 1789, is recorded in Vol. I of Town Records, p 178.

ISAAC DICKERMAN (eldest son of Samuel and Mary Alling), b. September 16, 1740, d. 1801; m. Sybil Sperry. Known as Lieut. Dickerman. Resided in Hamden. — Children: Simeon, 1766; Isaac, 1769; Amasa, 1771; Lyman, 1774; Manly, b. June 5, 1786; Allen, 1781; Sybil, 1783.

Presumably the Isaac Dickerman who was selectman in 1788, 1790, 1791, and 1798, 1799.

ISAAC DICKERMAN (son of Lt. Dickerman), b. Sept. 20, 1760, d. ———; m. Sarah Butler. Resided in Westville. — Children: Lucy, 1782; Eunice, 1784; Mary, 1785; Stephen, 1788; Isaac, 1791; Elias, 1793; Eli, 1795; Rebecca, 1797; Amos, 1800; John, 1803, d. 1803; Abigail, 1814; Silas, an infant. Mr. Tuttle places Abigail, 1814, as the daughter of Isaac, 3d, 1791, but her name is found as above in the Dickerman genealogy amongst the children of Isaac, 2d.

The following is compiled from data supplied by Mr. J. H. Dickerman, of Mt. Carmel.

JONATHAN DICKERMAN (1), son of Deacon Isaac, b. about 1720. Was a large farmer in Hamden. — Children: Enos, Jonathan, Hezekiah (d. 1751), Rebecca, Joel, Amos.

JONATHAN DICKERMAN (2), b. Jan. 13, 1747, d. 1821, æ. 75 years; m., March, 1770, Miriam Bradley, and had six children: Miriam, b. 1772; Jonathan, b. 1775; Eli, b. 1776; Abigail, b. 1777; Amelia, b. 1779; Aceinath.

JONATHAN DICKERMAN, b. 1775, d. 1831, m.

Children: sons, James, Marcus, Jonathan, Edward, Joel, Eli, Ira R., Augustus, Philo. Daughters, Sine, Mary, Sarah, Julia.

JONATHAN DICKERMAN (4), b. April 16, 1801, d. Oct., 1871; m. Angeline Todd, d. of Simeon Todd. Children: Sons, Winslow S., m. Laura A. Wilson; John H., m. S. Augusta Gorham, of New Haven; George E., settled in Wallingford, m. (1) Sarah Dudley, (2) Harriet Buckingham. Daughters, Caroline A., m. Charles M. Tuttle, of North Haven; Mary E., m. Charles Parker, M. D., Lockport, N. Y.

HEZEKIAH DICKERMAN, son of Jonathan (1), b. 1754, d. 1814, m. Hannah ——. Children: Hannah, b. April 30, 1790; Bede, b. Nov., 1791; Esther, b. Aug. 22, 1793; Patty, April 6, 1797; Joel, b. 1785; Jason, b. Aug. 18, 1786; Asahel, b. May 3, 1788; Arba, b. May 29, 1795; Jared, b. Oct. 2, 1798; Hezekiah, Jan. 16, 1801; Micah, b. March 12, 1804. A resident of Hamden and selectman in 1796 and 1797.

JESSE DICKERMAN (son of Samuel and Mary Alling), d. 1821, m. 1775, Damaris Ives. A resident of Hamden. Selectman, 1806 to 1809. A member of Baptist Church. Children: Betsey, Elam.

LEVERITT DICKERMAN, (vide Hamden Records, vol. i, p 232), b. Dec. 11, 1779, m. Oct. 12, 1806, to Pamela ———, b. April 19, 1785. Children: Charles, b. Oct. 19, 1807; Eleazer H., b. Oct. 7, 1809; William, b. March 16, 1812; Parmela, b. Sept. 13, 1815; Margaret, Jan. 26, 1818.

AMOS DICKERMAN (son of Jonathan, son of Deacon Isaac), b. —, d. 1822, m. Dec. 26, 1786, to Chloe Bradley. (Hamden Records, vol. I, p 175.) Children: Abigail, b. Oct. 28, 1789; Chloe, b. May 19, 1794; Sally, b. Aug. 23,

1796 ; Ezra, Dec. 2, 1799 ; Mary Ann, March 1, 1803 ; Alfred, Jan. 31, 1808.

ENOS DICKERMAN (son of Jonathan of Hamden), b. Nov. 2, 1743, m. Oct. 22, 1767, to Lois Alling. Children: Amy, b. March 26, 1769 ; Lois, Aug., 1772 ; Enos, Jan., 1775 ; Benoni, b. March, 1777. He was a soldier in the Revolutionary War, and was taken prisoner by the British, and died in New York city.

ENOS DICKERMAN (son of Enos), b. Jan. 15, 1775, m. 1797 to Mary Todd. Children: Enos, b. July 4, 1800 ; Elihu, b. May 14, 1802 ; Lebbeus, b. Dec. 31, 1803 ; Mary Ives, b. March 20, 1809 ; Lois Allen, b. June 12, 1816. (*Recorded* Feb. 12, 1819, p 231.)

The following entries in the records also occur :

Seymour D., m. May, 1816, to Levina Scran ; Russell D., m. Dec. 9, 1823, to Mareva Wolcott, both of Hamden ; Mr. Enos Dickerman to Miss * * Doolittle, Sept. 24, 1823.

Chloe, dau. of Sam'll and Lolu D., b. 15 July, 1779 ; Lolu, dau. of the above, b. Nov. 8, 1781 ; Miles, son of the above, b. Sept. 27, 1783 ; Polly, dau. of the above, b. July 17, 1785.

Cephas, son of Jesse D., b. July 26, 1793.

FORD.

The Ford family was prominent in Devonshire, Eng., before and at period of the settlement of New England. They were connected with the Drakes of Ashe, who engaged actively in the emigration to the new colonies. Sir Henry Ford, b. about 1620, was only son of John Ford of Bagtor, by wife Catharine, daughter and heir of George Drake of Sprattsbays, Esq., Lieut. Col. under his kinsman Sir John Drake of Ashe. Sir Henry Ford was twice principal Secretary of State to Charles II. in Ireland.

TIMOTHY FORD, of Charlestown, Mass., 1637, removed to New Haven, 1639, and d. Aug. 28th, 1684. His wife d. July 25th, 1681. Four children; the oldest, Matthew Ford, m.

January, 1675, Mary, dau. of John Brooks. Nine children: the eldest, Mathew Ford (2), b. October, 1675, d. Oct. 7, 1751; m. ——. Son, Timothy:

TIMOTHY FORD, b. Dec. 31, 1715, m. Mary Tuttle. Four children: the youngest, Moses Ford, b. Nov. 13, 1741, d. June 11, 1822. Deacon in the church.

STEPHEN FORD (Captain), b. about 1749, d. Nov. 19, 1843; m. Elizabeth ———, b. 1754, d. Jan. 6, 1817.

LYMAN FORD (Deacon), b. about 1789, d. Aug. 11, 1859; m. Betsey ———, d. Sept. 25, 1863.

JAMES MARCUS FORD, son of Joel Ford, was an influential man in Hamden, and had a family of several daughters.

GILBERT.

This name is prominent in the annals of Hamden, New Haven and New England, as well as in English history. English families of the name date back to the year 1300. It is prominently identified with the earliest efforts to found colonies in America. Sir Humphrey Gilbert, in the year 1603, in the reign of Queen Elizabeth, attempted to found a colony in Newfoundland. He was half-brother to Sir Walter Raleigh, and "one of the most accomplished men in England." (Folsom.)

Captain Raleigh Gilbert, a nephew of Sir Humphrey Gilbert, was one of the leaders of the Second Colony, or Plymouth Company, which sailed from Plymouth, England, on the last day of May in 1607, and arrived in Kennebec (Maine), early in August of the same year. He headed an expedition to explore the neighboring country; was President of the Council, and in 1608 returned to England with the colonists on account of the death of his elder brother, Sir John Gilbert, a prominent member of the Plymouth Company. Raleigh Gilbert was also one of the grantees in the Great Patent of New England from King James, in the eighteenth year of his reign.

At present we have no means of ascertaining whether Matthew Gilbert, one of the first colonists of Quinnipiac

(New Haven), and the progenitor of the Gilbert families of Hamden, was connected with this family of navigators and explorers.

Matthew Gilbert is enumerated amongst the first principal settlers of New Haven. He was one of the persons chosen, in 1639, for the seven pillars of the Church, and one of the first magistrates of the Colony.

In the list of the Planters with estimate of their estates, in 1643, Matthew Gilbert's name appears as having two persons in his family, and an estate valued at £600.

In the paper on the Governor Gilbert lot, in New Haven, by Dr. Cleveland (N. H. Hist. Coll. I. 123), he writes: "Matthew Gilbert was one of the foremost men in the settlement. He is supposed to have come from London, but of his birth, parentage or previous history nothing is now known. From the confidence reposed in him, and the services required of him, it may be presumed that he was in the prime of life and the maturity of his powers when he emigrated with this colony. He was one of the two who, in 1639, were chosen the earliest deacons of the first church in this city, which office he held until 1658, when he voluntarily resigned. He was one of the seven pillars selected to bear up both Church and State. From an early period, and for a long term of years, he was, in civil affairs, second only to Governor Eaton. On his broad shoulders were laid the burdens of magistracy; and in those days the office was no sinecure. He was first deputy magistrate, and after Milford and Guilford were comprehended in the jurisdiction he was Deputy Governor; a change of name only, not of office. To this honorable position he was re-elected by the Colonists.

"No name, except that of Governor Eaton, appears more frequently in the records in connection with important public business, and high and difficult trusts, than that of Matthew Gilbert. It is impossible to resist the conviction that he was a man in whose integrity, piety, strong common sense and large capacity for public affairs his fellow-

citizens reposed entire confidence, and with perfect safety—a confidence that was never abused and never shaken. His property was rated at £600. Mr. Gilbert died in 1680, and from him are descended the numerous families of Gilbert in this town and vicinity. The mysterious letters “M. G,” chiseled on the rude grave stone near the Center Church which the fertile imagination of Dr. Stiles translated into William Goffe, (supposing the M to be an inverted W,) and which somewhat violent theory has caused multitudes to dilate over those rough memorials with admiration for the renowned regicide, there is now little reason to doubt were the modest epitaph of the first Deputy Governor of New Haven Colony.”

Governor Gilbert left two sons: Matthew and Samuel. Samuel died in 1721, and was succeeded by his son Samuel.

MATTHEW GILBERT, son of Governor Matthew, died in 1711, leaving a son, Daniel Gilbert, who settled in that part of New Haven which is now Hamden, leaving five sons, viz: Matthew, Solomon, Michael, Caleb and John. He died in 1753. Michael and John were killed when the British troops invaded New Haven, July 5th, 1779. John Gilbert was Capt. of the up-town militia. Word was sent to him that the British had landed at West Haven and were coming up on the west side of West River and would cross at Thompson's bridge. He mounted his horse, rallied as many of his company as possible, and met the British troops, when five of his company were killed outright, and himself and many others were wounded. When the British officer, Capt. Parker, ordered him to surrender, Capt. Gilbert asked, “will you spare our lives?” “No, you d—d rebel,” and ordered a soldier to shoot him. Capt. Gilbert replied, “we'll never surrender,” and shot the officer, wounding him so that he fell from his horse. Capt. Gilbert was then pierced with bayonets and his skull broken with the butt of a gun.

The following is a copy of the inscription on the monument in the Evergreen Cemetery, erected by the family:

"In memory of Captain John Gilbert. A gentleman of reputation, beloved and esteemed in life and lamented in death, who fell in defence of his country, being slain by the British troops when they plundered this town, July 5, 1779, in the 48th year of his age. Also, in memory of Mrs. Lydia Gilbert, who d. Dec. 15, 1878."

JESSE GILBERT, son of Capt. John Gilbert, was born June 1st, 1762, died June 5th, 1833, leaving four sons, viz: Jesse, born Dec. 30th, 1797, died May 8th, 1851; Augustus Owen and Griswold Ives, born (twins) June 26th, 1807. Augustus O. died May 19th, 1850; Isaac Dwight, born June 26th, 1816, died Sept. 18, 1866.

JESSE GILBERT, 2d, b. 1797, m. Nov. 28, 1820, Laura Heaton, and had five children: Forbes Gilbert, b. 1821; Lydia, m. David Brooks; Street E., d. 1886; Howard D., Jesse Burton.

GRISWOLD I. GILBERT, b. June 26, 1801, m. Mary Ford, daughter of Joel Ford, and sister of James Marcus Ford. Their children were: Cleora, Joel Ford, John, Sereno Ives, Fred'k Augustus, Myron Griswold, Mary Amelia, m. Hoyt. Griswold I. Gilbert was member of the State Senate in 1853.

ASA GILBERT, of Hamden, b. Nov. 15, 1752; d. June 27, 1834, æ. 82; m. Aug. 30, 1781, Mary Gibbs, of Milford, Conn., b. Sept. 30, 1757; d. Sept. 5, 1840, æ. 83.

GIBBS GILBERT, Hamden, son of Asa, b. April 18, 1798; d. Sept. 26, 1881. He was married to Amelia Heaton of Hamden, Dec. 26th, 1822, by Abraham Alling, clergyman. (*Records*, vol. I, p. 172.)

MOSES GILBERT, was selectman in 1786.

GOODYEAR.

The monument to the Goodyear family, erected in the cemetery at Centerville, by Mr. William B. Goodyear, now a resident of New Haven, bears the following inscription:

North Side—Stephen Goodyear | a merchant of London,
came to New Haven | in 1638, was chosen magistrate |

Deputy Governor of the Colony in 1641 | and thereafter till his death at | London in 1658 | He was the Ancestor of All in America | who bear his name. | John Goodyear only son of Stephen | was father of | Nathaniel, Theophilus and Andrew. | Andrew Goodyear was father of | Timothy and Titus. | Titus Goodyear was father of | Andrew, John and Miles | also of Esther and Sybil. | Andrew Goodyear was father of | William, Titus, Miles and Andrew | also of Eliza and Polly. William B. Goodyear.

South Side—Horace Goodyear | died | Mar. 28, 1866 | æ. 73. Sally | his wf | d. Feb. 20, 1865 | æ. 70.

East Side—Willis Goodyear | died | Mar. 13, 1873 | æ. 74.

Dr. Bacon, in his Historical Discourse, says: "Stephen Goodyear, who from the organization of the civil government of New Haven till his death, stood almost uniformly in the office of deputy governor, appears to have been one of its merchants who followed Mr. Davenport from London to this country, and whose commercial habits and tastes determined the location of the colony and the plan of the town. His wife was one of the company who were lost at sea in 1646. (Winthrop, II, 176.) He afterwards married Mrs. Lamber-ton, the widow of the master of that unfortunate bark. Among other specimens of his activity and public spirit we find him, in 1655, forward in proposing and getting up "the iron works at East Haven, which he thought would be a great advantage to the town." He died in London in the year 1658. He was obviously considered by the colon-ists as second only to Eaton in qualifications for the service of their commonwealth." Trum. I, 233.

The name is identified with this region before and since the incorporation of the town. Asa Goodyear was one of the Selectmen first chosen under the incorporation (page 16). Theophilus was chosen in 1787 and 1788; and Stephen Goodyear in 1790. Asa Jr. was made a freeman in 1786; Titus in 1787; Jared in 1792, and Eli in 1795.

The following relative to the family of Asa Goodyear and of Jesse Goodyear is from information supplied by Mr. Geo. F. Tuttle, of New Haven :

ASA GOODYEAR, b. May 25, 1733 ; d. Mar. 25, 1811 ; dea. in Hamden ; m. Sept. 11, 1755, Mehitable dau. of Dea. Samuel and Elizabeth (Todd) Sackett, b. Feb. 22, 1732 ; d. Aug. 8, 1787 ; (2) . . . Sybil . . . who d. Dec. 5, 1808, in the 64th year of her age.

1. Betsey, b. Jan. 2, 1756 ; d. by 1811 ; m. Jan. 20, 1778, Joshua Atwater, b. May 13, 1753. He m. (2) Esther Hull, rem. to Horner, N. Y., and d. there July 31, 1814. See Atwater book for eight children.

2. Mehitable, b. Aug. 26, 1757 ; d. 21 Oct. 1777 ; m. Enos Bassett, Mar. 14, 1776, son of Enos and Mary (Heaton) Bassett, d. Aug. 31, 1776, in his 22d year.

3. Mary, b. Mar. 23, 1760 ; m. Stephen Munson.

4. Asa, b. Feb. 14, 1762 ; m. Rhoda . . .

Rhoda, b. Oct. 22, 1782 ; d. Nov. 10, 1802, æ. 20 ; est. set. in 1820 by Amos Goodyear and Jared Ives of Hamden.

2. Mehitable, b. Sept. 22, 1784.

3. Nancy, b. Mar. 18, 1786.

JESSE GOODYEAR, b. June 18, 1735 ; d. May 24, 1817, æ. 82 ; captain ; m. June 25, 1761, Hannah Bradley, who d. Apr. 3, 1822, æ. 82. The will of Jesse Goodyear of Hamden names sons Jesse, Joshua, Amos, and daus. Hannah Bassett (Amos), Mabel Ives (Jesse), and Rebecca Gill (Thomas). Joshua had Marcus, Lois and Bede.

WILLIAM B. GOODYEAR, now living in New Haven, was born in Hamden in 1801 ; m. Charlotte Lorraine Frost about 1830. We owe to Mr. Goodyear's public spirit and commendable veneration of the memory of his ancestors the monument in the Centerville Cemetery bearing the inscriptions already given. From him we learn, also, that Charles Goodyear, famous for the discovery of the vulcanization of caoutchouc, was the son of Amasa Goodyear.

WATSON A. GOODYEAR, son of Chauncey, son of Stephen, (verbal com. of W. B. Goodyear of New Haven), was born in Hamden near the south line of the town. Graduated in the Science Department of Yale College, 1863. Was engaged in mining and metallurgical work in California

shortly after, and became assistant on the Geological Survey of California. Appointed Geologist of San Salvador, and spent one or two years in exploration there. At present, Mr. Goodyear is Geologist of the California State Mining Bureau. He is the author of several papers on scientific subjects, and translated the treatise on Assaying by Bodeman and Kerl.

CHARLES GOODYEAR, the discoverer of the method of vulcanizing rubber, is a descendant of one of the Hamden or New Haven families, and has rightfully earned a world wide fame not only as the originator of a great industry but as a benefactor to mankind.

At the request of the editor, Professor O. P. Hubbard, formerly the assistant of the Elder Silliman in the Yale Chemical Laboratory, and who was occasionally consulted by Mr. Goodyear, has furnished some interesting reminiscences of Mr. Goodyear and his search for the substance that should transform the crude rubber gum into an available waterproof substance, resisting heat and cold.

"Mr. Goodyear prepared, I believe, a history of his art printed on rubber sheets and bound in covers of hard rubber, or Vulcanite, with a copy of the large medal received by him at the London Universal Exhibition of 1851 inserted in each cover, the head of Her Majesty Victoria being upon one side and of Prince Albert on the other."

"My acquaintance with him began some fifty years or more ago. He then had one absorbing idea—to transform the crude india rubber, known to every one, but of which little was known, and its use quite limited and its value insignificant, into an article indestructible by severe chemical action and applicable to a thousand useful and elegant purposes, and indispensable to the race in peace or war. He succeeded, and saw the result of his invention. He was then without means, having failed in business in Philadelphia, and was sustained in his work by a brother-in-law, Mr. Steele, a well-known resident of New Haven, until his advances reached a large sum. Goodyear subsequently had

the opportunity to reciprocate this favor and he faithfully responded."

"I once visited the place where he worked — a hovel on Sodom Hill, New Haven — flat-roofed and internally blackened, with few if any fixtures, or moveables, beside a coarse table, and on it a smooth stone slab and an iron roller. There were a few shelves on the wall holding bottles of india rubber, dissolved in spirits of turpentine. How I regret that all this could not have been photographed, and himself with it in silence and alone in his mysterious work, as a frontispiece to his biography! How little did he comprehend the meaning of his simple handicraft, or the wide outreaching of the labyrinthine thread he held in his fingers.

"He began by mixing pulverulent earthy substances with the solution of india rubber. On cold winter mornings he brought to me, in the Yale Chemical Laboratory, his experimental preparations, in the now old-fashioned wooden pill boxes, to be tested by heat, nitric acid, and caustic potassa — and all to be destroyed.

"The same result followed the testing of successive groups of his mixtures, until the field of experimental inquiry became very limited.

"I could but admire his equanimity under all these disappointments, and the courage and hope in which he pursued his exhaustive experimenting till he obtained the prize.

"We know the results of his inquiry, and must regard him as one of the greatest benefactors of the age.

"It was my good fortune, in 1831, to take Chancellor Kent, at his fiftieth year of graduation, around the college cabinet. He had been reading Bakewell's *Geology* — the only treatise we had — and was filled with the subject, and especially with the great question of fossils and geological time. On seeing a large block, a solid mass of fossil shells, lying in the opening of a window, he exclaimed: 'Mr. H., how *old* is that?' 'Sir, I cannot tell.' 'I would give

anything I have in this world to know how old that is,' he replied, with a powerful gesture. "I have been conscious of a similar feeling in reference to Mr. Goodyear, and the effort has been as futile, if I could comprehend the spiritual foresight that originated the conception, and the forces that enabled him to realize it; the interaction of his whole intellectual and moral power, focalized in darkness and space, and after passing almost all known pulverulent materials in mixture at varying distances across the axial line, with only negative results, at last, with one or two, a luminous focus shined forth, and he could cry out in joy — Eureka!"

The history is indebted to Mr. Frank E. Hotchkiss, of New Haven, for copies of the inscriptions on tombstones standing in the cemetery at Centerville, marking the resting places of members of the Goodyear families of Hamden:

Emma, daughter of Lyman and Mary, d. July 1, 1842, æ 20; Mary, wife of Dea. Lyman, d. Sept. 3, 1875, æ 76; Dea. Lyman, d. July 21, 1873, æ 87; Lewis, d. Oct. 17, 1840, æ 52; Lusina, wife of do., d. June 10, 1858, æ 68; Cordelia, daughter of Samuel and Lucy, d. May 15, 1832, æ 22; Friend S., d. April 17, 1837, in 21st yr.; Mrs. Olive, wife of Capt. Lyman, d. Oct. 5, 1827, in 40th yr.; Jesse, d. March 25, 1826, æ 60; Amos, d. May 18, 1849, æ 66; Tryphena, wife of do., d. April 23, 1873, æ 89; Mabel, daughter of Tim. and Ruth, d. Oct. 12, 1791, æ 12; a son and daughter of Lewis and Lusina, Eunice and Celestia, d. Jan. 27, 1820, æ 1-8-9; Francis Lewis, d. Nov. 12, 1822, æ 1-4-4; Lusina, daughter of above, d. Dec. 22, 1828, æ 14; Sally, dau. of Jesse and Mercy, d. May 24, 1818, æ 23; Miss Sarah, daughter of Nath., d. July 21, 1775, in 80th yr.; Mrs. Hannah, wife of Simeon, d. May 30, 1805, æ 37; Rhoda, dau. of Asa and Esther, d. April 10, 1802, æ 20; Mrs. Sybil, wife of Dea. Asa, d. Dec. 5, 1808, in 64th yr.; Mrs. Mehitable, wife of Dea. Asa, d. Aug. 8, 1787, æ 55; Emily Cornelia, only daughter of Marcus and Emily, d. April 11, 1858, æ 20; Theophilus, d. May 28, 1793, æ 62; Andrew, d. April 26, 1781, in 79th yr.; Sybil, daughter of

Amos and Esther, d. Oct. 23, 1774, in 30th yr.; Mrs. Esther, wife of Andrew, d. Jan. 12, 1788, in 80th yr.; Timothy, d. Jan. 1, 1816, æ 80; Dea. Asa, d. March 25, 1811, æ 78, "prudence, industry and piety"; Eunice, wife of Simeon and daughter of Col. Jonas and Annie Prentice, d. Aug. 15, 1810, æ 36; Capt. Jesse Goodyear, d. May 24, 1817, æ 82; Ruth, wife of Timothy, d. Aug. 20, 1806, æ 66; Albert, b. Nov. 30, 1797, d. July 12, 1878; Marcus, d. July 12, 1869, æ 63; Emily B., his wife, d. June 17, 1881, æ 73; Emily B., d. April 11, 1858, æ 20; F. Gardner, d. at Ship Island, Sept. 9, 1863, æ 22; Edwin C., d. February 28, 1864, æ 35; George H., d. April 13, 1868, æ 33—children of Marcus and Emily. Andrew, d. Oct. 16, 1819, æ 36; Titus, d. April 13, 1798, in 53d yr.; Sarah, widow of Jesse, d. April 3, 1822, æ 82; Joshua, d. Nov. 15, 1817, æ 50; Russell, his son, d. Jan. 7, 1810, æ 2 mos.; Jason, son of Samuel and Lucy, d. Oct. 14, 1827, æ 15; Samuel, d. Aug. 6, 1827, æ 49; Lucy, his wife, d. Aug. 5, 1833, æ 58; Eliza, wife of Jesse F., d. Jan. 22, 1837, æ 38; Nancy, wife of do., d. April 27, 1836, æ 34; Jesse F., d. July 16, 1856, æ 58; Julia, dau. of Lyman and Mary, d. Feb. 6, 1841, æ 20 "piety, intelligence and kindness"; Mary, wife of Dea. Stephen, d. Oct. 29, 1832, æ 85; Dea. Stephen, d. Nov. 1, 1803, in 75th yr.; Esther, wife of Capt. Stephen, d. Oct. 23, 1776, in 48th yr.; her daughter Esther, d. Oct. 11, 1776, in 20th yr.; John, her son, d. at N. Y., Sept. 21, 1776, in 22d yr.; Sally Atwater, the daughter, d. Sept. 27, 1776, in 18th yr.; Mrs. Lucy, daughter of Dea. Stephen and Esther Goodyear, d. Aug. 31, 1773, in her 18th year; Mabel, daughter of Mabel, d. Aug. 20, 1773, in her 15th year; Caroline R., daughter of Lewis and Lucina, d. Dec. 3, 1828, æ 16; Mercy, wife of Jesse, d. Sept. 3, 1817, æ 47; Rhoda, widow of Joshua, d. Sept. 27, 1819, æ 50; Patty, wife of Andrew, d. April 17, 1821, æ 30, also the son Titus d. Feb. 13, 1834, æ 23; Abigail, wife of Titus, d. March 9, 1836, æ 87; Simeon, d. Dec. 26, 1815 æ 51; Joel, d. Nov. 1824, æ 69; Mary Ann, his wife, d. Jan. 27, 1799, in 35th yr.; Sarah, wife of Theophilus, d. Dec. 1, 1775, in 43d yr.

HEATON—EATON.

JAMES HEATON, b. in England in 1683; came to New Haven, 1649; m. Sarah Street, 1662. Nine children; the eldest,

NATHANIEL, b. 1664, m. Mary Todd, b. 1675. Seven children; one,

NATHANIEL (2), b. 1704, m. 1st, Phebe Cooper, in 1726. Four children: Mary, who m. Enos Bassett in 1748; Sarah, who d. unmarried; Nathaniel, b. 1732, and Joseph, b. 1736, m. 2d, Mrs. Thankful Bassett Yale.

NATHANIEL (3d), b. March 21, 1732, (in H. P. Cemetery, tombstone of Nathaniel, gives date of d. July 12, 1803, æ. 74), m. Sibbel Todd. Nine or ten children: Sarah, b. 1755, m. Daniel Gilbert; Thankful, b. 1757, m. David Talmadge, Jr.; Sibbill, b. 1759, m. (1st) Sacket Gilbert, (2d) Timothy Andrews; Patience, b. 1761, m. Joseph Dorman; Joseph, b. 1764; Phebe, b. 1766, d. young; William, b. 1768, d. unmarried in 1802; Nathaniel, b. 1770, d. 1784; Willis, b. 1774.

WILLIS, b. 1774, m. ———, father of

AUSTIN EATON, a well known resident of Hamden, now living on the Cheshire Road a short distance north of Jared Bassett's place.

IVES.

JONATHAN IVES. The first Ives settler of the region now the town of Hamden was Jonathan Ives, who made a home there when it was a wilderness about the year 1735. There were then no roads, and the settlers traveled by marked trees. He first located on the bank of Mill River, not far from the present village of Ivesville. His nearest neighbor was fully a mile distant from him. Afterwards he removed with his family to what is known as the "turnpike," and lived in a house which was opposite what is known as the "Allen Dickerman place."

In 1737 he married Thankful Cooper; they had eight children, four of whom were sons, viz:

Jeremiah Ives, who lived at what was formerly known as the "Cooper Place," now owned by W. W. Woodruff; he afterwards removed to West Springfield.

Joel Ives, who located in Branford.

Jonathan Ives, who remained on his father's farm, building his house where the house of Mr. L. A. Dickerman now stands. The wife of Allen Dickerman was the daughter of Jonathan Ives.

Allen Ives, who also settled in West Springfield. There were also four daughters.

The ancient arm-chair exhibited at the Centennial by Miss Julia Dickerman, originally belonged to Jonathan Ives, the first settler.

JAMES IVES, born in Hamden. Elam, his son, b. about 1762.

ELAM IVES, b. about 1762, d. 1845, m. May 9, 1790, to Sarah Hitchcock. Children: Parsons, b. Aug. 29, 1791; Bede, Dec. 31, 1793; Jason, April 28, 1795; Sally, Jan. 8, 1798; Lyman, April 21, 1800; Elam, Jan. 7, 1802; William, Jan. 1, 1804; Mary, Nov. 28, 1805; Henry, Jan. 24, 1808; Julius and Julia, twins, Jan. 24, 1811; Lucius, May 5, 1813; James, Dec. 8, 1815. (*Received to record, March 30, 1822, and recorded by Russell Pierpont, clerk—p. 233.*)

"Elam Ives occupied the house now occupied by his son, Lucius Ives, on the western bank of Mill River on the road leading from Mount Carmel to North Haven, where he died in 1845, over 84 years of age, in consequence of cutting his foot while getting wood on his farm in the winter. On the same road across the river was his birth place, where his father, James Ives, also a farmer, early settled, and where, in his last sickness, when his son Elam called in the early morn to see him, he said, "well, Elam, the sun has got up before me this morning, which it has not done before in twenty years." This farm is now occupied by Henry Todd (a great grand son of James Ives), who inherited it from his ancestors."

“Elam Ives volunteered his services in the war of independence, at the age of sixteen or seventeen, to defend the coast at New Haven. During the war of 1812, when commerce by water was blockaded, he established a freight line between Boston and New York, conducted by his two oldest sons, Parsons and Jason, about twenty and fifteen years old respectively. The former died in 1850, aged 60, the latter in 1880, at the age of 84. The freight line consisted of two wagons drawn by two yokes of oxen and a horse each.”

“Diminutive as this line may now appear, it then possessed the dignity, in company with other similar ones, of being the only means of transportation and traffic between the two great cities. And the thousands of dollars' worth of silks and other goods entrusted to those boys, and which they often carried overland through Worcester, Providence and New Haven, evinced characters not much depreciated from their grandparents who helped settle our country; or their father, who fought for its independence and was now fighting for its rights.”

ELAM IVES, (2) b. Jan. 7, 1802. Mr. Ives was the pioneer in the manufacture of carriage small hardware at Mt. Carmel about the year 1830. He was a thriving farmer, honored by the town with the office of Justice of the Peace and grand juror for many years.

JAMES IVES, b. Dec. 8, 1815, m. Lucy Ann Candee, of Oxford, Conn., Nov. 28, 1838, who was born there July 14, 1818.—Children: Catherine Candee, Lucy Wheeler, Mary Augusta, Sarah Hitchcock, Helen Melissa.

Mr. Ives has resided in the upper part of the town, near Mt. Carmel, and has long been actively identified with the manufacturing interests of that section. This history is indebted to him for most of the information regarding the manufacturers and manufacturing establishments at Mt. Carmel, and particularly for the account, which follows, of the connection of Mr. Henry Ives, and other members of the Ives family, with the carriage axle business, already partly noticed on pages 144, 145 and 146.

By reference to that description, it will be seen that Parsons and Jason Ives commenced the manufacture of iron axles by machinery in the year 1833, thus making a great advance and improvement upon the old and tedious methods of hand work and hand power. They were the pioneers in this important industry, and were greatly aided by their brothers Henry and James.

HENRY IVES, b. January 24, 1808; d. 1860. Son of Elam (1).

At the date above mentioned (1833), "some of the finer axles imported from abroad at very high prices were in use, nicely finished but much too heavy for the American taste. And here in the axle—as in every other department of manufacturing—the active Yankee found a favorable opening for his enterprise. The vulnerable point of the English has ever been their inactivity in the matter of change of styles and weights of goods to suit the prevailing demand. After extensive travel and observation in the west, Henry Ives made arrangements with his brothers and individually established, about 1835, the Mount Carmel Axle works which, with its well equipped workmen, guided by its tasteful and observing proprietor, made essential improvements and changes in the construction of axles, several of which have been universally popular, and rule the market and trade to this day—notably the half patent and swelled collar."

"Mr. Ives created a remarkable demand for his goods, and by his accommodating business transactions, which his financial success soon enabled him to practice, he extended his trade into every state in the Union."

"This condition of things continued, with scarcely any competition, during his life which ended in 1860, at the age of 52, in the midst of success and honor."

"During this time the Axle works had been removed from the power on the canal and located on an historic old mill site on Mill River, anciently called "Hunt's Mills," and

later "Kimberly's Mills," where Roaring Brook, Eaton Brook and other tributaries meet in the mountain gap on their way to New Haven harbor, and are brought into service by a short dam founded on a rock with Mount Carmel for one abutment. This forms an admirable water power which, with other incidental advantages for business, will be noticed further on. Here Frederick Ives, son of Henry Ives, after the death of his father, with Willis E. Miller and George E. Ives, in the name of Frederick Ives & Co., during the war of the rebellion continued the business with great success. In course of time George E. Ives retired from the firm to form a connection with L. F. Goodyear, of New Haven, in the name of Goodyear & Ives, continuing in the same business."

"Frederick Ives and W. E. Miller, in the name of Ives & Miller, continued the Mount Carmel Axle works, enlarging and improving its business by the introduction of new machinery and goods. They especially added to their reputation by the invention and manufacture of Miller's patent axle, the superior value of which has commanded the attention and patronage of the higher class of carriage makers in New Haven, New York and elsewhere."

FREDERICK IVES. "The name of Frederick Ives, the senior partner, whose death occurred in 1883, at the age of 51, should have a special notice here.

"We will only say, his early and long experience in the axle business with his father prepared him for the situation when it came upon him. While reticent in business transactions and disposed to retirement, his superior judgment and watchful care were ever manifest in the essentials of a business where life and limb are dependent upon the quality of material and workmanship. And just here, reader, consider the responsibility of the axle maker whose every day and hour's work is to stand the wrack and wrench of careless driving with the loads of precious life over rough country roads or worse city streets with stone pavements, iron rails and switches so laid that for axle

breakers human skill would fail to excel them! And how difficult and burdensome the task of the carriage architect and builder compared with the house builder!"

"To assist him in his business, Mr. Ives was fortunate in the selection of Willis E. Miller, a youth born on the soil, whose father was a sturdy mechanic and pioneer carriage spring maker, which business was early started in Mount Carmel by the late Hon. Charles Brockett, Augustus Dickerman and others. Young Miller, with a true appreciation of Mr. Ives' kindness in elevating him to his position, returned to him by his faithfulness an hundred fold, which his natural qualifications enabled him easily to do."

"The business is still continued by Mr. Miller, with Harry Ives, son of Frederick Ives, as partner, and assisted by a numerous succession of the Miller family, whose substantial homes surround the works, and apparently guarantee the continuance and success of the business, with its widespread reputation, through future generations. Having the honor of being the first works for this manufacture in our country let the familiar sounds of its trip hammer long echo through the mountain valley. Why not? Its motive power, susceptible of great improvements, will endure "while water flows," which may be longer than natural gas continues. Its coal and iron are landed at its doors by railroad. Its merchandise is shipped to the west or southwest as cheaply as from New York city, and being only fifteen minutes by railroad, or a short drive by team, to ocean navigation at New Haven, it need not fear the present exciting maneuvers of railroad monopolists, in view of the large southern or foreign trade now fast opening."

E. IVES, JR., achieved distinction as a musician, and, in connection with W. Alpers and H. C. Timm, he was the author of the volume of music, known as the "Beethoven Collection," published in 1845, and a second and enlarged edition in 1855.

LEEK.

PHILIP LEEK, born in Dover, England, in 1611, was one of the first settlers in New Haven. He came to New Haven at the age of 27, and died there in 1676 aged 65 years. He had two sons, Thomas and John, and two daughters.

THOMAS LEEK, had two sons and five daughters. His sons were named Thomas and John.

THOMAS LEEK, 2d, b. March 22d, 1688, m. Mary Winston June 1, 1706. In 1719 he settled in that part of New Haven Colony, which is now Hamden. He had three sons Thomas, Timothy and Daniel, and five daughters. His son

THOMAS LEEK, 3d, grandson of Thomas, and great grandson of Philip, was born Nov. 1723. He married Mary Johnston and had one son and one daughter.

THOMAS LEEK, 4th, his son, grandson of Thomas, great grandson of Thomas and great-great grandson of Philip, married Rhoda Alling and had eleven children, eight sons, and three daughters. The youngest and only surviving member of this family,

DANA WINSTON LEEK, b. Jan. 14, 1810, owns, and has always lived on the old place in the house built by his father in 1811. This being the third house built on the premises. In this house, the family not yet having occupied it, household goods, belonging to friends in New Haven, were stored for safety during the fear of British invasion in 1814. The well on the south side of the house, yet in use, and noted for the coldness and purity of its never failing spring, was dug by Thomas 1st, in 1720.

The foregoing account was supplied by Mr. John E. Leek.

The following notice of the death of a member of the Leek family appeared in the *New Haven Journal and Courier*, May 25, 1887.

"Mr. James H. Leek died suddenly last Tuesday, May 17th, at his home in Mt. Carmel of pneumonia. He leaves a wife and two daughters, Mrs. Jesse B. Davis of Mt. Carmel, and a younger sister living at home with the parents.

Deceased was the first one taken from a family of seven—five sisters, Mrs. Elizabeth Ross, Mrs. Francis R. Benham, Mrs. Robert A. Benham of this city, Mrs. Jared A. Whiting of Whitneyville and Mrs. Frederick W. Ells, of Fair Haven, and a brother, Mr. Leverett G. Leigh, of this city. The youngest of the seven is nearly fifty-two years of age. He was born and brought up in the town of Hamden, and had resided in the same place for the last thirty years. He was a man of the strictest integrity and one that will long be remembered for his warm heart and genial manners.”

MATHIER.

Mr. Henry Mather, a well known resident of this town, was born in Suffield, Conn., and came to Hamden when quite young with his father, William Mather, who, according to a family tradition, was a descendant of the Rev. Richard Mather of Massachusetts.

MIX.

The Mix family in Hamden is a branch of the old Mix family of New Haven, descendants of Thomas Meekes, Mixx, or Mix, as the name was variously spelled.

The immediate ancestor of the present Mix family in Hamden moved into the country from New Haven before the incorporation of the town.

THOMAS MIX, b. 1765 ; d. Sept. 1, 1810, leaving three sons ; Benjamin, b. 1782 ; Lina, d. June 18, 1823 ; Stephen, d. June 28, 1823.

BENJAMIN MIX, b. in Hamden, Aug. 10, 1782 ; m. Betsy Potter, Apr. 12, 1810 ; d. Aug. 30, 1862. He lived about half a mile northwest of Judge Bassett's house, on the Cheshire road, and a quarter of a mile or less north of Mr. Isaac Benham's place. Children : Rebecca Elizabeth, Ethiel Potter, d. in Wisconsin ; Grace, Eliza, Benjamin, Henry, James Perry, Norris Bennett, Frances Betsy, m. Wm. Potter ; Dwight Walter.

NORRIS BENNETT MIX, b. in Hamden, Feb. 31, 1826; m. Maria N. Hendrick, of New Haven, Sept. 13, 1849. Represented the town in the Legislature in the years 1878 and 1879. Served six years as First Selectman, and as Town Agent. Mr. Mix was active while Selectman in securing the removal of the track of the New Haven and Northampton Railroad from the side of the old Cheshire road and the turnpike to the new route east of the highway. Although the town had voted to contribute \$14,000 to the company towards the cost of the removal, the plan was opposed and Mr. Mix was enjoined and placed under a bond of \$20,000 not to make any contract with the company or to pay over the money. He secured the action of the Legislature in favor of the change, and a decision also of the court, and finally paid over the money and secured the change in the position of the railroad.

JONATHAN MIX, b. in New Haven Apl. 19, 1753; m. Aug. 6, 1771, Anna Sears, sister of Capt. Joshua Sears of revolutionary fame. 2d. Elizabeth Mary, dau. of Capt. Solomon Phipps from Maine, but then a resident of New Haven. Mrs. Elizabeth Mix inherited the farm and old homestead at Cherry Hill, on the summit of the ridge on the cross road leading west from the Cheshire road, opposite the house built by Judge Jared Bassett, over to the West Rock range, and resided there for many years.

Mr. Mix was a member of the military company known as the New Haven Cadets, and was one of those of the company who marched from New Haven to Lexington in 1775. He was in active service throughout the War of the Revolution; was one of the company of heroes from New Haven who rode from New Haven to New York and destroyed Rivington's press. He was, also, with the first naval expedition to the Bahamas, and assisted in the capture of New Providence. He sailed as Captain of Marines, and was captured and imprisoned in the Jersey Prison Ship. At the close of the war he invented the thorough-brace and elliptic carriage springs now in universal use, and may thus be

regarded as the father of the carriage-spring industry. Copies of the specifications of these patents are given on pages 155, 156 of this volume. He was also the inventor of an improved cartridge box for troops, and of a method of conveying away the smoke from the fuse of guns on ship-board. In this effort he had the co-operation of Robert Fulton, and the fixture was added to some of the guns of Fulton's steam frigate.*

Captain Mix had several sons and daughters by his first wife; three of the sons were in the U. S. Navy. His only daughter, by his second marriage with Mary Elizabeth Phipps, Adeline N. Mix, m. Elihu Blake.

PARDEE.

The Pardees are said to be of Welsh descent.

THOMAS PARDEE is supposed to have come from Wales and settled near the present residence of R. H. Cooper. He was a Whig of the Revolution. Of his family but little is known. His son Joseph married Betsey Gill of North Haven, who was the sister of the late John Gill, the grandfather of Gen. E. D. S. Goodyear.

JOSEPH and BETSEY PARDEE had two children, Esther and John; Esther Pardee married Elizur Cadwell of Durham; they had seven children; Louisa, Laura, Mary J., Grace, who died in infancy, Sarah, Horace and Charles.

JOHN PARDEE had five children: Jane, George F., Jennet, John, who died at the age of five, and John H.

Louisa Cadwell m. Henry H. Wooding; Laura m. Charles Cooper; Mary J. m. Walter S. Thompson; Horace P. m. Jane Pease of Mass.; Charles m. Sarah C. Hinman; Jane Pardee m. George Hinman; George F. m. Louisa Cook of Cheshire; Jennet m. Roswell L. Nichols; John H. m. Martha

* *Vide*, Memoir of Capt. Jonathan Mix. New Haven, 1886, p. 90.

PIERPONT.

This name, evidently of Norman origin, is traced back to Robert de Pierrepont, or Robert of the Stone-bridge, who accompanied the Conqueror to England. In the seventeenth generation from this Norman ancestor, Robert was created Earl of Kingston in 1628. The earl had a younger brother, William, who, it is stated, was the father of James, who came to America with two sons, John and Robert.*

JOHN PIERPONT settled in Roxbury, Mass., and m. Thankful Stow. Ten children. James, the sixth son, b. 1660:

JAMES PIERPONT, b. Jan. 4th, 1660 or 1659. Graduated at Harvard College 1681. Ordained Pastor of the First Church in New Haven July 2, 1685. The memorial tablet on the wall of the Center Church in New Haven bears the following inscriptions: "His gracious gifts and fervent piety, persuasive, elegant and winning manners were devoutly spent in the service of his Lord and Master," and "He was one of the founders of Yale College."

He m. Oct. 27, 1691, Abigail, daughter of Rev. John Davenport; (2d) 1694, Sarah, dau. of Rev. Jos. Haynes. Nine children by second marriage; the fifth:

JOSEPH PIERPONT, b. Oct. 1, 1704; d. Aug. 6, 1752; m. Hannah, 9th child of Rev. Nondiah Russell, b. Feb. 23, 1707, d. June 6th, 1791. Ten children: The second:

JOSEPH PIERPONT (2d), b. Sept. 13, 1730; d. Feb. 8, 1824. Grad. Y. C. 1751; m. Feb., 1756, Lydia Bassett; (2) Anna Blakeslee, of Plymouth, Conn., Oct. 26, 1791. Town clerk of North Haven. The third son:

RUSSELL PIERPONT, b. May 17, 1763; d. Dec. 12, 1844; m. Dec. 8, 1790, to Sarah Miles Tuttle (Hamden Records, page 176.) He was chosen Town Clerk of Hamden in 1801 to succeed Simeon Bristol, and held the office until 1842. He was chosen one of the Selectmen of the town in 1806, 1807 and 1808. He represented the town in the Legislature in the years 1810-11, 1818-19.

* For these and succeeding data the Editor is largely indebted to the Tuttle volume, by George F. Tuttle.

PUTNAM.

The Reverend Austin Putnam, for nearly half a century the pastor of the Hamden East Plain Society, exerted by reason of his position and unremitting, faithful labor in his ministry, and his notable Christian character and example, a great influence upon the religious development of the community. He was present at the Centennial celebration and made the opening prayer, and heartily enjoyed and commended the exercises of the day. He died in the following September. The following account of the funeral services appeared in the *Daily Palladium*, September 30th, 1886:

Services over the remains of Rev. Austin Putnam, pastor of the Whitneyville Church since 1838, were held at the church yesterday afternoon. About 600 people were present, including Sunday-school children, who sat in a body. The church was heavily draped, and a few flowers were placed over the casket, which was covered with black broadcloth, and upon which were two bouquets of roses and a sheaf of wheat. The bearers were deacons and ex-deacons of the church—Dr. Treadwell, J. M. Payne, J. G. Baldwin, H. W. Munson, H. Hummiston and E. Dickerman. The clergymen officiating were Rev. L. H. Higgins of the Mt. Carmel Church, who read the scripture and offered the opening prayer; Rev. S. P. Marvin of Woodbridge, who read the hymns; Rev. Dr. J. L. Willard of Westville, who preached the sermon, and Rev. W. T. Reynolds of North Haven, who made the closing prayer. At the grave, prayer was offered by Professor George E. Day. Other clergymen present were Rev. E. Blakeslee, Rev. Burdett Hart, Rev. E. E. Hall, Rev. E. Cunningham of Fair Haven, Rev. J. E. Twitchell, President Timothy Dwight, Professor W. M. Barbour, Rev. T. S. Samson, Rev. Dr. Todd, Rev. S. H. Bray, Rev. W. J. Mutch, Rev. Mr. Leonard, Rev. Mr. Denton, Rev. E. E. Atwater, Rev. Mr. Bushnell, Rev. D. J. Ogden, Rev. S. W. Barnum, Rev. W. H. Butrick, and

Rev. C. W. Park of Birmingham. Interment was in the Bassett lot in the cemetery near the church. With the exception of one year, when he was abroad, Mr. Putnam was absent from his church only one communion Sunday during his long pastorate.

EXTRACTS FROM THE FUNERAL SERMON BY REV. J. L. WILLARD.

It is now a little more than five years since the late pastor of this church in Whitneyville said to me one day, "In case I die first, it is my wish that you speak such words at my burial as you may judge best." Two years ago that wish was repeated, and was made for the third and last time on the morning that he died. Hence, no one will need to ask why another than myself was not chosen to this part of the service.

* * * * *

AUSTIN PUTNAM. The son of Samuel and Susan Gibson Putnam, was born in Croydon, N. H., March 6, 1809. He was admitted to the bar of the supreme court of the state of New York, at Utica, in July, 1831. He was licensed to preach by the Addison County association, at Bridgeport, Vt., February 3, 1833. He was married to Miss Caroline W. Northrop, only daughter of General Joseph A. Northrop, of Lowville, N. Y., September 30, 1833. He was ordained to the ministry by the Watertown Presbytery at Lowville, N. Y., March 6, 1834. He was installed as pastor of the church in Whitneyville, Conn., by the New Haven West consociation, October 31, 1838. He received from Yale college the honorary degree of A. M. in 1840. He traveled in Europe in 1844 and 1845. I think of him as he was when, at the age of twenty-nine years, he was installed as pastor of this church of Christ. The men and women of that generation esteemed him highly for his work's sake, and with good reason, for he "studied to show himself approved unto God, a workman that needeth not to be ashamed, rightly dividing the word of truth." He believed

in his heart that God would own and bless his every labor of love, and as he believed, so has it been unto him. Fifty times save two, have the storms of as many winters beat about these hills; fifty times save two, have the trees put forth their tender buds and leaves; fifty times save two, have the waters slept and rippled in the summer sunshine; fifty times save two, have the yellow October days come with flowers and fruit, and golden harvest. And all through these changing seasons this servant of the Most High God has kept faithfully to his work, showing unto the people the way of salvation.

Would I describe a preacher such as Paul, were he on earth, would hear, approve and own, Paul should himself direct me. I would trace his master strokes and draw from his design. I would express him, simple, grave, sincere, in doctrine incorrupt, in language plain, and plain in manner. Much impressed himself, and conscious of his awful charge, and anxious mainly that the flock he feeds may feel it too; affectionate in look, and tender in address, as well becomes a messenger of grace to guilty man.

Behold the picture. Is it like? And if so, like whom? God gave to your fathers and mothers a good minister of Jesus Christ, and whom they honored, the children have honored: whom they loved, you have loved; whom they trusted, you have trusted; and as he did them good and not evil, so he has done you good. He knew that the church here could not thrive, and grow, and prosper, and that those who might dwell here could not be "that happy people, whose God is the Lord," unless there were many to say, how dear to us are thy courts, Oh Jehovah!" Hence, he resolved to preach the word, to be instant "in season and out of season," to reprove, rebuke, exhort with all long suffering and doctrine.

* * * * *

His life was gentle, and the elements so mixed in him, that nature might stop and say to all the world, a Christian man! The strong elements in his Christian character

were these. He was a man of prayer. One who loved him, and gave himself for him, had said by the mouth of His apostle, "Pray without ceasing." Our departed friend read that injunction and sweetly obeyed. I have never known one who gave better proof that he did for years maintain unbroken soul communion with God. Like a bird singing out the spirit of the song that is in it; like a flower unfolding brightness and beauty in the warm sunshine, pushed by a quickening force in root and stem; so, by a law no more forced and no more unnatural, there appeared to those who knew our brother best heart evolutions warm with the love of Christ. These took to themselves words that, many a time, "dropped like rain and distilled as the dew." Words that had in them power to comfort and cheer and soothe. His was a life of prayer in its best and highest meaning. When Moses had been talking with God the skin of his face shone, but he knew it not; no more did our brother realize the light and blessedness reflected from his own soul life. Others saw the glory and the beauty, and were constrained to say, "that man has been talking with the infinite." He read his Bible with faithfulness and care. He believed till his dying day that "all scripture is given by inspiration of God, and is profitable for doctrine, for reproof, for correction, for instruction in righteousness, that the man of God may be perfect," that is, well grounded in all essential truth, and thoroughly furnished unto all good works. His sermons were carefully prepared and thoroughly biblical. May it not be that his success as a preacher depended largely upon this latter fact? When I say that he read his Bible faithfully and with care, I do not forget that he had in his own mind an objective and subjective purpose. Subjective, that he himself might become strong in the Lord and in the power of his might. Objective, that he might help others to attain to the same spiritual growth. Such Bible reading is good. Hence, his remarks were clear and didactic, going down to the roots of things. He realized, I think, as but few do on

earth, the intensity and power of a strong personal union and friendship with the Lord Jesus. We may say of him as one said of Thomas Arnold : "Of Jesus he ever thought; the outwelling of tender love toward Him shed over the strong framework of his character that beautiful and gentle light which rests on the soul of him who has ever one bosom friend."

Christ to him was real. He looked into His eyes; he took hold of His hand; he walked by His side; he joyed in His presence. And who of us could put more of the apostle's spirit into the words, "God forbid that I should glory save in the cross of our Lord Jesus Christ, by whom the world is crucified unto me and I unto the world," than our friend departed could have done while ministering to this people? If any one, where does he live and by what name is he known? Ah friends! He was a man take him for all in all whose like we do not often look upon. And yet his modesty was such, his work so quiet and unpretending, that men of more shallow attainments and far less mental power, described what are called "Wider spheres of influence." As one said of the late Professor Hadley, "People had to find out what he was. He had no mind to make it known." But by the people of his charge his name and earnest words cannot be forgotten. Many will call to mind how he urged the flock of God to be ready to every good work. How he beseeched the unbelieving, in Christ's stead, to be reconciled to God. Most tenderly did he love their souls, and often will they hear a voice coming up as it were from the very grave where his body is sleeping in the dust, saying "Remember the words that I spake unto you, being yet present with you." His heart's desire and prayer to God was that they might be saved. And as he grew in years he grew in knowledge and adorned more and more the doctrine of God our Saviour. Whitneyville owes to him a debt that it can never pay. The work that he has done here cannot be valued with silver and gold. He has laid deep, and strong, and broad foundations that

fire cannot burn, nor storm destroy, nor floods wash away. He lives in your private devotions, about your family altars, in your meetings for prayer and praise, in all your appliances for public worship; and through the long and loving service he has neither sought nor asked for a wider sphere of usefulness. Had he not found enough here to engage his heart and hands? Had he not been a burden bearer? Had he not sought to cheer the desponding, to comfort the sorrowing, to strengthen the weak, to raise up the bowed down, to speak a word in season to him that was weary? And when did he ever turn his back on one because he was poor, or ignorant, or black, or down-trodden, or despised? Moreover, did he not come to your homes in dark hours, in sad hours, in hours when dear ones lay sick unto death? In short, did he not love his people, and labor for them with untiring assiduity? Were they not in his thoughts, and in his prayers, and in his studies? Could he not say, "For the space of forty and eight years I ceased not to warn every one?" Nor did he covet any man's silver, or gold, or apparel, and

" I venerate the man whose heart is warm,
Whose hands are pure, whose doctrines and whose life,
Coincident exhibit lucid proof
That he is honest in the sacred cause."

He did run well, and you his people have been blessed and the beauty of the Lord our God has been upon you. And you are ready to say of your late under shepherd, "We owe much to him; he has been so faithful." It may be said of him, as it was of one who died before he saw the light: "He brought much that did not pass away with him, and of which we may confidently affirm, that it shall not pass away." And here, if I may change the name of both place and man, and quote in part another's words, I cannot do better than to say, Whitneyville is a better village beyond your life to guess, than it would have been but for the life of him who for nearly two generations

ministered to the people in holy things. Still, he belongs to you, and he rests here after the long day's work. I bid you treasure his dust, and lay his beautiful and simple life to your heart.

* * * * *

*How he has shared in your joys and sorrows; been with you in adversity and prosperity, in sunshine and in storm! In these homes he has visited the sick, comforted the dying; and out of a loving heart, and with loving lips, has told again and again the story of Jesus. You will never find one to love that story better; or to tell it more sweetly. And never will there come to you another having in his nature more of the simplicity of Christ. In his strong affection for Whitneyville, it may be said of him, in words once applied to another, "It is the one place on all the earth he loved most dearly, and is blended most intimately with his life as it will be through the long years to come, with his memory." And I may add that the dwellers on this plain, and by the waters of this quiet lake, whose hearts beat and pulse to-day with a larger hope because he lived, will, till their dying hour, look back upon him with love and honor. Here, shall be told again and again, the story of his life work. How the New Hampshire boy, with a warm heart, and a bright, keen intellect, asked for no higher honor than to be the well-loved pastor of the church at Whitneyville. He read how the great world was moving and stirring all about him; how this one and that one, as judged by worldly tests, was climbing higher up than he himself had climbed, but his soul within him was sweet, and calm, and strong. He was content with his lot. And while many a church was changing ministers as often as the seasons change, always looking for and never finding the coming great man, and so was being dwindled, and dwarfed, and divided; you were moving quietly along, growing, thriving, and prospering under the preaching, praying and working of one, who "grappled you to his soul as with hooks of steel." And if to have lived and

died in Whitneyville was not a world glory to him, it was a heaven glory to you. For the space of forty-eight years no church had a better man in its pulpit. Few had one more able.

It was my sad privilege to talk with him and pray with him about an hour before God took him to his heavenly home. His mind was clear, his soul calm, his heart gently resting in the Lord. There was no rapture, but there was a better thing than that—a deep and abiding trust. He hoped in God. As he expressed it, “In the infinite mercy of God,” and “God be merciful to me a sinner,” was the text from which he had prepared a sermon to have been preached, as he had prepared, on the morning that he died. The hymns, too, had been selected, and given to the chorister, one of which has for the last stanza these words,

When the storms of trial lower,
When I feel temptations power,
In the last and darkest hour,
Jesus, Savior, be Thou nigh!

And, Jesus Savior was nigh. To use the words of Frederick Robertson, “He had come to the battlefield, the field to to which he had been looking forward all his life, and the enemy was not to be found. There was no foe to fight with.” And then, and there I felt the force of those words, “Thou will keep him in perfect peace whose mind is stayed on thee, because he trusted in thee.” As I turned away after holding his hand in mine, he said “Good-bye, God bless you.” Many a time will the heart cry,

O for the touch of a vanished hand?
And the sound of a voice that is still.

In his former home is one who shared in all his joys, and was touched with every sorrow that came to him, as though coming to her. She will never cease to thank God that he gave her such a companion. The heart of her husband did safely trust in her, and she did him good, and not evil, all the days of his life. “She looked well to the ways of her

household, and did not eat the bread of idleness." A faithful wife and mother whose price is far above rubies. God grant that a sweet and tender light may fall upon her path, till she goes to dwell with him whom she loved and honored here on earth. And the children; they will never cease to thank God that he gave them such a father; one who trained them in the ways of virtue and true manliness, and taught them to look upon life with sunny eyes and strong hearts.

To the widow and children this husband and father has bequeathed an inheritance more precious than silver or gold—a good name; a name fragrant with blessed memories in the hearts and homes of the people; and when under the pressure of a great sorrow, what voice more comforting than that of him who said, "Come unto me, all ye that labor and are heavy laden, and I will give you rest." A father of the fatherless, and a judge of the widows, is God in his holy habitation. And he will not leave you comfortless. He will come to you; and in him you may find strong consolation. "A present help in trouble." An exceeding great reward. To have been the wife of such a man: to have shared in his joys, and sympathized in his sorrows for fifty-three long years, and to be the children of one "so nobly good"—one who by precept and example taught you to walk with God, is, I trust, a fact which you will be thankful for in this life, and in the life to come.

To this church and people, it is pleasant to say that you were kind to him, in the afternoon of his life. And so it was that God blessed him with a long Indian summer, in which his heart mellowed with love, and gratitude toward you all. He said to me, not many weeks ago, "The last ten years of my ministry have been the happiest of my life. My people have been so kindly, and so good." The dear old man! How he loved you, and how you loved him! And well you might, for he was worthy. "Have you any special message to leave for your people?" I put that question to him on Sunday morning, an hour perhaps before he died.

"None but my life, and work among them." That was the substance of his reply. And in it there was no grain of boasting, any more than in the words of Paul, when he said, "I have fought a good fight." Your hearts are full to-day. Tears are in your eyes. You sorrow that you are to see his face on earth no more. Well, if you loved him and would hold his name in perpetual freshness and in abiding honor, be what he was, good and true and Christly in all the relations of life.

SMITH.

John G. Smith, of Whitneyville, was major of state militia, and several times elected one of the selectmen of the town from 1844 to 1855.

General S. R. Smith, a grandson of Jos. A. Smith and son of John G. Smith, a member of the staff of Governor Harrison, was also born in Whitneyville.

TODD.

Asa Todd who went to the defense of New Haven at the time of the British invasion and was killed in the upper part of the town, in the street now known as Broadway, was descended from:

CHRISTOPHER TODD, b. — in Pontefract, England; baptized 1617, was in New Haven, and engaged in the year 1639, as a farmer and miller at the end of Mill Rock, on Mill River. He m. Grace Middlebrook, and d. April, 1686.

MICHAEL TODD, 5th son of Christopher, b. June, 1653, m. Elizabeth Brown.

GERSHOM TODD, 3d son of Michael, b. Oct., 1695, d. Nov. 1748, m. Hannah —, d. 1773.

ASA TODD, b. March 24, 1723, m. April 19, 1748, Mary (Tuttle) Alling; killed in action by the British in New Haven, July 5, 1779.

ELIZABETH TODD, dau. of Asa Todd, b. Apr. 13, 1749; m. March, 1772, Captain Solomon Phipps from Casco Bay, Maine, a descendant of a brother of Sir William Phipps, Governor of Massachusetts.

At the time of the British invasion Mrs. Phipps fled to the old homestead in Hamden, which she inherited from her Tuttle ancestry, now known as Cherry Hill, taking with her, in a chaise, her young daughter.

ELIZABETH MARY PHIPPS, dau. of Capt. Solomon and Elizabeth his wife, b. Nov. 27, 1776, m. Aug. 5, 1800, Capt. Jonathan Mix. Mrs. Mix was long a resident at the old homestead, at Cherry Hill; a substantial, old fashioned, Connecticut home, with low ceilings, a very heavy oak frame, paneled walls, and an enormous chimney built of stone. The kitchen fire-place was nearly ten feet long, and four feet deep, with a large dome-shaped oven at one end. The only vestige of this old home remaining is the stone-lined well which was in front of the house. The building becoming dilapidated was torn down about the year 1845.

Mrs. Mix took an active interest in the religious affairs of the town and was instrumental in the establishment of the Sabbath school of the East Plain society. Her only child:

NANCY ADELINE MIX, b. April 18, 1805, m. Elihu Blake, a nephew of Eli Whitney, from Westborough, Worcester county, Massachusetts. Mr. Blake built the house now standing, and named the place Cherry Hill, in the year 1836.

TUTTLE.

The generations of the Tuttle family in America have been wonderfully recorded in the volume by George Frederick Tuttle of New Haven, entitled "The Descendants of William and Elizabeth Tuttle, who came from Old to New England in 1635, and settled in New Haven in 1639." They had twelve children, the fourth:

JONATHAN TUTTLE, was baptized in Charlestown, Massachusetts, in 1637. He m. Rebecca Bell, dau. of Lieut. Francis Bell of Stamford, and had six children; the youngest, Nathaniel, born Feb. 25, 1676. He was the founder of a settlement near the Quinnipiac River in the southern part of the present town of North Haven, and built the bridge long known as Tuttle's bridge.

NATHANIEL TUTTLE, b. 1676; d. 1728; m. Esther Blakeslee. They had seven children, the fourth,

NATHANIEL TUTTLE, b. May 29, 1714; d. —; m. Jan., 1737, Mary Todd, and (2) Abigail Ingham. Their eight children were born within the limits of the present town of Hamden. The eighth, son of Abigail,

JESSE TUTTLE, b. Jan. 26, 1759; d. in Hamden 1849, æ 90 years; m. Lucy, dau. of Samuel and Mary Alling Dickerman, of Hamden. He m. (2) Eunice Gilbert. Three children by first wife: Ambrose, Leverett and Jesse. His name appears for the first time amongst the town officers in 1794, being then chosen tythingman for the ensuing year. In 1798 he was chosen grand juror; in 1803 one of the surveyors of highways, and in 1805, 1806, 1807 and 1808 one of the selectmen.

AMBROSE TUTTLE, b. Sept. 17, 1784; d. 1872, æ 88; m. Mary Allen. He served the town in many official capacities. In 1805 he was chosen one of the surveyors of highways. In 1806 he was admitted as freeman and chosen as constable; in 1807 town collector; in 1811 one of the listers, and in 1814 one of the selectmen. He also received amongst the townspeople the title of "Esquire."

LEVERET TUTTLE (brother of Ambrose), second son of Jesse, b. 1786; d. 1877, æ 91, then the oldest man in Hamden; m. 1809, Electa Kimberly, and had five children, Horace, Lewis, Julia, Henry and Dennis. In 1808 he was chosen one of the surveyors of highways, subsequently collector of State taxes and selectman. He was captain of the Hamden militia, and drafted men from Hamden in the war of 1812. He represented the town in the Legislature in 1840.

Of his children, Horace moved to Iowa City, Iowa, and was U. S. Marshal. He then moved to Dubuque, and was for several years Judge of the City Court. He then returned to the old home in Hamden, and died there æ 71 years. Lewis died at the old home, where the house of his brother Henry now stands, at the age of 25 years. Julia

m. Jesse Mansfield, and d. in Hamden æ 34 years. Henry, (see below). Dennis practiced law in New Haven a few years and removed to Iowa City, and thence to Hudson, Wisconsin. District Attorney there until the breaking out of the war, when he enlisted and served in the Army of the Potomac till the close of the war, and returned to New Haven.

HENRY TUTTLE, b. Oct. 23, 1820. Born and bred on his father's farm, he became much interested in raising cattle, and had a large dairy for twenty years or more, and while carrying on business as a dairyman and farmer on a considerable scale, he has given great attention to the law, and is much sought for legal advice by his fellow-townsmen and others. He has served the town officially in many ways, ever since he was twenty-two years old. He represented the town in the Legislature in 1858, and again in 1884. In 1871 he was elected to the State Senate, and throughout his career has actively promoted measures for the benefit of his constituents and the public. He was instrumental in making the Cheshire turnpike a free road, in having the Whitneyville horse railway laid on the west side of the avenue, and was active in inducing the New Haven Water Company to clean out the swamps on the borders of the lake and to keep the lake in such a condition as to avoid the generation of miasma.

Other members of the Tuttle family were prominent in the official life of the town in the early part of the century and since; we find the names of Lyman, Levi, Asa, Amasa, Eli, Julius and Jesse S. Tuttle, as holding various offices, before the year 1820.

Mary Tuttle, daughter of Deacon Joshua Tuttle, of New Haven, married Ebenezer Alling, and 2d. Asa Todd, who was killed at the British invasion of New Haven. (See Todd). A part of her life, if not the greater portion, was spent at the old home on the high ridge extending north and south between Cherry Hill and the West Rock range, where the Alling family so long resided.

WARNER.

The families by this name are numerous, especially in the northwestern part of Hamden, a part of which is sometimes called "Warnertown." Efforts to obtain any family records or reminiscences have been unavailing.

The town was represented in the Legislature in the Session of 1886, by Mr. Hubert E. Warner, son of Elias Warner, who was representative in the years 1863 and 1864.

Hezekiah Warner was chosen one of the Selectmen in 1790, 1791 and 1792, and again in 1810 and 1819.

Hezekiah I. Warner, represented the town in the Legislature in 1822.

Elam Warner was chosen Selectman from 1820 to 1822 inclusive, and representative in 1833.

The annexed inscriptions are from tombstones in the Hamden Plain (west) Cemetery, copied by Mr. Geo. F. Tuttle.

Ira Warner d. Aug. 20, 1835, æ 96; Betsey his wife d. March 3, 1877, æ 72.

Jesse Warner d. 1818, æ 52.

Isaac Warner d. Feb. 21, 1826, æ 51; Damaris his wife d. next day æ 49.

Amos Warner d. July 18, 1835, æ 31.

Benj. Warner d. Mar. 2, 1800 in 70th year.

Jesse Warner d. Feb. 14, 1862, æ 63.

Samuel Warner d. Oct. 8, 1876, æ 81; Abigail, his wife d. Nov. 21, 1873, æ 74.

Mrs. Susannah, wife of Eben 2d, d. Jan. 2, 1815, æ 78; Jonah d. Nov. 5, 1848, æ 84.

Joel G. Warner d. April 22, 1866, æ 62; Patty his wife d. Oct. 19, 1881, æ 83.

Reuben Warner d. Sept. 19, 1882, æ 84½ or 34½.

Walter Warner d. 1859, æ 54; Eliza, his wife, d. Aug. 21, 1848, æ 33.

Abner Warner d. Jan. 24, 1861, æ 63; Mary, his wife, d. Jan. 13, 1882, æ 81.

Ebenezer Warner d. Oct. 19, 1855, æ 88; Hannah, his wife, d. July 5, 1849, æ 81.

Levi Warner d. Jan. 17, 1877, æ 79.

Ebenezer Warner d. Feb. 19, 1811, æ 78.

Elizabeth, dau. of Jonah, d. Aug. 27, 1795, æ 21.

Dorcas Warner d. Dec. 1, 1817, in 70th year.

ELI WHITNEY.

The following is a copy of the inscription on the tomb of this remarkable man:

ELI WHITNEY

"The Inventor of the Cotton Gin,
Of Useful Science and Arts the efficient Patron and Improver.

In the relations of life a model of excellence.

While private affection weeps at his tomb, his country
honors his memory."

Died Jan. 8th, 1825.

Born Dec. 8th, 1765

Although Mr. Whitney's life is thus truthfully epitomized, the history of the town of Hamden requires an extended notice of his labors and achievements. Hamden was the chief field of his labors. He here created new industries, and new methods, which have left their impress upon the growth of the town, and upon the history of human industry.

Mr. Whitney was born at Westborough, Worcester County, Massachusetts. His father, a thrifty and prosperous farmer, was descended from an English ancestor, who early emigrated to Massachusetts, and his descendants were among the most respectable farmers of Worcester County. His mother, Elizabeth Fay, was also of English ancestry. Tradition says that at the time of the early colonization of Massachusetts, the ancestor of the Fay family called together his five sons and thus addressed them:

"America is to be a great country; I am too old to emigrate to it, but if any one of you will go I will give him a double share of my property." The youngest son accepted the offer and settled near Boston.

In his boyhood, Whitney assisted his father in the labor of the farm, and during the winter months he attended the district school. In after life, he used to tell with pride that from eleven years of age it was his duty to fodder and water sixty head of cattle before he went to school in winter ; that the nearest way to the school-house was across the fields, three-quarters of a mile, and that he made his own path through the snow.

His predilection for mechanical pursuits and invention was shown at an early age. His father was similarly inclined, for he had a workshop with a variety of tools, and a turning lathe, where he could make chairs and wheels in the winter days when the farm work was over. In this shop, young Whitney delighted to spend his time at all seasons rather than to work upon the farm. The privilege of using the tools, and to be making something, was to him the greatest pleasure. When about twelve years old he made a complete violin, and he finished it so well that it excited much admiration, and dilapidated violins were sent to him from all directions for repairs. A year or two later, during the war of the Revolution, nails became very scarce and dear ; and the boy saw the opportunity for a profitable manufacture. At that time all nails were forged out by hand, one at a time, upon an anvil. Young Whitney persuaded his father to procure the necessary material and tools to begin this manufacture, and he soon established a profitable business. But he was not content to work alone, and he projected a plan for enlarging the business and employing others. To this end he made a journey through the neighboring towns, visiting all the workshops he could find, and gleaning information from every source. He succeeded in his effort, and set one or more men at work. In this effort we can see the evidence of the boy's breadth of view, and the spirit of the large manufacturer and business man. We can truly say, that the workshop was our Whitney's school of technology, and that in it he gained that intimate knowledge of the properties of materials so important and so useful to him in after life.

During this period of his life his mind had been rapidly developing, and he began to look out from, and beyond, his immediate surroundings.

At the age of twelve, his father had proposed to him to prepare for and to take a collegiate education ; but at this time the boy, not fully appreciating its value, and being absorbed by his more agreeable mechanical occupations, did not favor the proposition, but in the autumn of 1783 he had so far changed his views as to consider a liberal education very desirable, and he resolved, though then near eighteen years of age, to endeavor to obtain one. His father thought him then too old to begin the preparatory studies, and to give the required time to them, which time, with the four years at college, would require, he thought, about six years, so that his son would be twenty-four years old at graduation. He likewise doubted whether his son had any preference for either of the learned professions, and he could not be satisfied that the benefits of such a course of study would compensate for the time and money required. His father did not refuse to send him to college at that time, but was in great doubt as to the expediency of such a course. While the question was still undecided, and the way was not quite clear, an advertisement for a schoolmaster for the neighboring town of Grafton fell under young Whitney's eye, and he at once resolved to offer himself for the place. Borrowing a horse of his father the next day, he went to Grafton, was accepted by the Selectmen, and engaged to teach the school for seven dollars a month and his board, all that they could offer him. Returning, he told his father what he had done. The old gentleman expressed great astonishment that his son should assume to teach others, when he so greatly wished to go to school himself. But Whitney was not discouraged. He immediately reviewed all his studies, and at the appointed time took charge of the school, and gave such entire satisfaction that he was re-engaged for the following winter. With the money thus earned he was enabled to go to Leicester Academy during

the summer term. In this manner he taught school five winters in succession, at Grafton, Northboro, Westboro and Paxton, and attended school himself in the summer term at Leicester Academy, where he prepared himself for college.

But at the old home there were grave doubts as to the wisdom of his taking so much time and money for a college education. It was discussed at the fireside, and the neighbors who admired Eli's practical abilities, shook their heads and strengthened any doubts that had arisen in the minds of his father and mother. One of them, helping to dissuade his father from sending Eli to college, said: "It is a pity such a fine mechanical genius as his should be wasted."

But Whitney's preferences prevailed, and at the age of twenty-three years, in 1789, he entered the Freshman class in Yale College.

His father laid the farm under contribution, and managed to aid him to the extent of one thousand dollars during his college course—a large sum in those days—and young Whitney was able, by industry and the exercise of his mechanical skill, to add a few dollars to this. His mechanical skill was once of great service to the college, for a piece of expensive apparatus being broken, it was not possible to make some of the usual experiments. It was supposed that the apparatus must be sent abroad to the maker for the repairs, but when the difficulty was mentioned to Whitney, he undertook to repair the apparatus, and he succeeded to the great satisfaction of the professors. At another time, having occasion to use some tools reluctantly lent to him by a carpenter, the carpenter was astonished at his dexterity, and exclaimed, "there was one good mechanic spoiled when you went to college."

When nearing the close of his college life, Mr. Whitney fixed upon the law as his profession, and made his plans accordingly. But he still was under pecuniary embarrassment, and his way was not clear. At this time he received an offer of eighty guineas a year to go to South Carolina as

a tutor in a gentleman's family, and he decided to accept it and to prosecute his legal studies there at the same time. After paying his college bills with the last remittance from his father, he gave his own notes for his indebtedness in New Haven, and for sufficient cash to enable him to reach his post at the South. Amongst other essential preparatory duties for the long journey he went to New York and was inoculated for the small pox.

About the time of his leaving New Haven, he was introduced to the widow and family of the late General Greene, and Phineas Miller, Esq., who was traveling with them to the North, and young Whitney sailed in the same ship with them to Savannah. On their arrival he was invited to go with the family to Mrs. Greene's plantation at Mulberry Grove, beyond Savannah. Soon after reaching there the small pox made its appearance amongst the negroes, and Mr. Whitney immediately inoculated more than fifty of the slaves, and carried them all safely through their illness.

Mrs. Greene, being a brilliant and attractive woman of extended social connections, her home became the resort of gentlemen of intelligence and influence. In the conversation respecting the condition and prospects of the South, there was a general lament that no method existed of separating the cotton staple from the seed of the upland green seed variety, except the slow and tedious method of picking by hand. To separate one pound of the fibre from the seed was considered a day's work for one woman. This work was usually done in the evening, after the day's labor in the field had ended. After the supper, the slaves, men and women and children, were collected in circles to clean the cotton. One stood in the center with a long whip, by which he could reach to the extreme points of the circle, to arouse the dozing and quicken the indolent.

Whitney appreciated the need of a machine, with less soul and more energy than such poor creatures could supply, and he originated in his mind the essential features of

the cotton gin, destined to not only enrich all cotton growing regions, but to ameliorate the condition of both slaves and freemen throughout the world.

Whitney communicated his conviction that he had devised a practicable machine for the purpose to his friend, Mr. Miller, and consulted with him how to procure the tools and materials with which to construct one. But the engagement to teach was in the way of an immediate devotion to this work, and after the expiration of three weeks, delightfully spent with his friends at Mulberry Grove, he set his face towards the plantation on the borders of South Carolina, where he was to spend the winter. Arriving there, he was told that the crops had been bad, that instead of fifty guineas he could receive only forty, but that he might make up the deficiency by teaching the children of neighboring planters. Thus being released from his engagement he did not hesitate to reject the new offer, and after spending only one night there, he turned back to his friends in Georgia and was most cordially received by them and invited to spend the winter and devote himself to the construction of the machine he had devised. A room was assigned to him in the basement of the house, and with such crude implements and materials as a Georgia plantation afforded, he commenced his task. Mrs. Green and Mr. Miller were the only persons ever admitted to his work-room, and the only persons who knew upon what he was engaged. The many hours spent in this mysterious way excited much curiosity and comment amongst the younger members of the family. But strong in his perception of the end shortly to be attained, and cheered by the faith and confidence of his two friends, he toiled on, and towards the end of the winter the machine was so far completed as to leave no doubt as to its success.

The story of the cotton gin cannot, however, be better told than by Mr. Whitney himself in the draft of a memorial to Congress found amongst his papers, without date, but probably written in 1807.

“To the Honorable the Senate and House of Representatives of the United States in Congress assembled, the memorial of Eli Whitney respectfully sheweth :—”

“That your memorialist is the inventor of the machine with which the principal part of the cotton raised in the United States is cleaned and prepared for the market. That being in the State of Georgia in the year 1793, he was informed by the planters that the agriculture of that State was unproductive, especially in the interior, where it produced little or nothing for exportation. That attempts had been made to cultivate cotton, but that the prospect of success was not flattering.”

“That of the various kinds which had been tried in the interior none of them were productive except the Green Seed Cotton, which was so extremely difficult to clean as to discourage all further attempts to raise it: That it was generally believed this species might be cultivated with great advantage if any cheap and expeditious method of separating it from its seed could be discovered, and that such a discovery would be highly beneficial both to the public and the inventor.”

“These remarks first drew the attention of your memorialist to this subject, and after considerable reflection he became impressed with a belief that this desirable object might be accomplished. At the same time he could not but entertain doubts whether he ought to suffer any prospects of so precarious a nature as that which depends upon the success of new projects to divert his attention from a regular profession. About this time Congress passed a new Patent Law, which your memorialist considered as a premium offered to any citizen who should devote his attention to useful improvements, and as a pledge from his country, that in case he should be successful, his rights and his property would be protected. Under these impressions your memorialist relinquished every object of pursuit and devoted his utmost exertions to reduce his invention, which as yet was little more than a floating image of the

mind, to practical use, and fortunately for the country he succeeded in giving *form* to the conception of his imagination and to matter a new mode of existence, and the result of this new modification of matter was everything that could be wished. After reducing his theory to practice by effectual and successful experiments your memorialist took out a patent."

"So alluring were the advantages developed by this invention that in a short time the whole attention of the planters of the middle and upper country of the Southern States was turned to planting green seed cotton. The means furnished by this discovery of cleaning that species of cotton were at once so cheap and expeditious and the prospects of advantage so alluring that it suddenly became the general crop of the country."

"Little or no regard, however, was paid to the claims of your memorialist, and the infringements of his rights became almost as extensive as the cultivation of cotton. He was soon reduced to the disagreeable necessity of resorting to courts of justice for the protection of his property."

"After the unavoidable delays which usually attend prosecutions of this kind and a laboured trial, it was discovered that the defendants had only *used*—and that as the law then stood they must both *make* and *use* the machine, or they could not be liable. The court decided that it was a fatal though inadvertent defect in the law, and gave judgment for the defendant."

"It was not until the year 1800 that this defect in the law was amended. Immediately after the amendment of the law your memorialist commenced a number of suits, but so effectual were the means of procrastination and delay resorted to by the defendants that he was unable to obtain any decision on the merits of his claim until the year 1807—not until he had been eleven years in the law, and thirteen years of his patent term had expired."

"A compromise has been made with several of the States to which your memorialist has assigned his right and relin-

quished all further claim ; but from that State in which he first made and introduced his invention, and which has realized greater benefits from it than any other State, he has received nothing."

Further details regarding this invention and the litigation attending it have already been given (pages 112-120.)

PRESIDENT DWIGHT TO MR. PINCKNEY.

The high reputation for ability and personal worth which Mr. Whitney had gained during his college life in New Haven is best shown by the following letter of introduction of Mr. Whitney from President Timothy Dwight of Yale College to Hon. Charles Colesworth Pinckney, at Charleston, South Carolina :

YALE COLLEGE, Oct. 27th, 1801.

SIR,—This letter will be handed to you by Mr. Eli Whitney, formerly a Graduate of this College, the Inventor of a Machine much used, as I am told, in the two Southern States in cleaning Cotton. This machine, originally secured to him by patent, has been plundered from him ; and his labor and ingenuity employed in forming it, together with his expense to a large amount, have been nearly fruitless to himself although highly advantageous to his fellow-citizens.

He has been informed that the Legislature of North Carolina are disposed to make him a consideration for the Machine, and is now commencing a journey to that State, from the hopes which this information has given him. Permit me, sir, as a friend of so worthy and ingenious a man as Mr. Whitney, to solicit your friendly assistance to him, so far as you may judge to be proper and find convenient for the furtherance of his success in this undertaking.

To you, Sir, it will be in the stead of many ordinary motives to know that your aid will in this case be given to a man who is rarely, perhaps never, exceeded in ingenuity or industry, and not often in worth of every kind. Every

respectable man in this region will rejoice to see him liberally rewarded for so useful an effort, and for a life of uncommon benefit to the public.

Mr. Whitney is now employed in manufacturing muskets for the United States. In this business he has probably exceeded the efforts not only of his countrymen but the whole civilized world, by a system of machinery of his own invention, in which expedition and accuracy are united to a degree probably without example.

I should not have thought it necessary to speak of him in so strong terms had I not believed that his own modesty would keep him from discovering his real character.

A wish to serve a worthy man will, I am sure, be my apology to you, Sir, for this application.

With the highest consideration, I have the honor to be,
Sir,

Your very obedient and most humble servant,
TIMOTHY DWIGHT.

ESTABLISHMENT OF THE ARMORY.

The constant annoyance, and actual pecuniary loss, which Mr. Whitney suffered in consequence of the invention of the Cotton-Gin, and his efforts to secure his rights, caused him to turn his thoughts in another direction.

At that period arms were greatly needed by the young republic; most of those used during the war of the Revolution had been imported from France, and it became important to establish the manufacture in the United States. The subject was discussed in Congress, and these discussions arrested the attention of Whitney. The fabrication of arms in quantity not only promised to be profitable, but it seemed to be a patriotic duty to establish works in the United States for the purpose. Patriotism in those days was a salient virtue, and we have evidence that patriotism, as well as a desire to engage in a profitable business, actuated Mr. Whitney. Oliver Wolcott, the Secretary of the U. S. Treasury at that time, appears to have been much interested

in this matter, and Mr. Whitney, on the 1st of May, 1798, addressed him a formal letter on the subject (see page 120), which led to the conclusion of a contract, June 14th, 1798, for the manufacture of ten thousand muskets on the Charleville (French) pattern, at \$13.40 each. Mr. Whitney at once set to work in earnest to get ready for this great undertaking. He had already secured the mill site on Mill River in Hamden, and decided to establish the manufacture there.

It was apparently his expectation, at first, to use imported barrels, which could be had in the rough at Philadelphia, but in August of the same year, 1798, in a letter to Oliver Wolcott, he states that he had a project for procuring iron in Connecticut, obviating the need of sending to Philadelphia for it; the prevalence of yellow fever there interfering with business.

Parties at Salisbury, Conn., had also offered to supply barrels, forged out, ready to bore and turn.

On May 31st, 1799, Mr. Whitney addressed the Secretary of the Treasury, Hon. Oliver Wolcott, at considerable length, explaining the various hindrances that had prevented his completing the arms as soon as had been expected.

ELI WHITNEY TO SECRETARY WOLCOTT.

"SIR,—I do not make that progress in the execution of my contract for fabricating muskets which I expected at the time I contracted. I have met with many unexpected and unavoidable delays and disappointments, which could not have been foreseen and guarded against. I was also myself mistaken in some of my calculations at the time I entered into the contract.

"The greatest and principal cause of delay has been the uncommon length and severity of the past winter. Its early commencement prevented the completion of many things appertaining to my water works, such as dams,

flumes, etc., which, had the winter held off as usual, would have been accomplished in a short time; the earth and water once sealed up with frost, these things must of necessity be postponed, not only till the opening of the spring, but till the spring floods are over. Its long continuance produced a great scarcity of forage for cattle, and until within these few days it has been extremely difficult to procure any team work even at double the usual prices. These circumstances have not only delayed the progress of that part of the business which must be done under my own immediate direction, but rendered it impossible for others to supply me with materials as they had agreed and fulfil their engagements with me.

"In the month of February I contracted with Messrs. Forbes & Adam of Canaan, who are unquestionably among the most able and punctual dealers in and manufacturers of iron in this country, to make me a number of tools, mill irons, and other heavy iron work, for all which I carried them patterns at the time, and to supply me with rolled iron rods, etc., of a particular description; all these things they were to send to me in a fortnight. At the time I was there their works were frozen up and had been somewhat injured by a late flood. They, however, attempted to cut out their wheels and go to work the day I left them, but it was so extremely cold that they were obliged to give it up for that day, and said "after one moderate day their works would be going and I should have my articles immediately." But with all their resources and exertions their works are not yet in motion. I had a letter from them a few days since saying that "their works were much more injured than they imagined, that they had been for a time repairing them and expected to have them in motion the next week."

"I have been all the more particular in relating these circumstances because much of my work has been delayed by this disappointment, and to show that the best, ablest and most experienced men meet with impediments which they can neither foresee nor remove.

“At the same time I contracted with another man in the same neighborhood, a man of property and reputed to be one of the most punctual, to supply me with several tons of iron, all to be delivered in the month of April. The season proved such that neither ore could be dug nor coal burned till all the fodder for cattle was expended, then neither ore nor wood could be transported for the want of team work, and I have not received a single pound of iron from that quarter.

“The man with whom I contracted to furnish me with barrels failed, this would have been a great disappointment if I had met with no other; as it is, however, I think I shall do as well as if he had fulfilled his engagements. It would be too tedious to mention all the disappointments which I have met with.

“At the time I entered into the contract to manufacture the arms my mind was much occupied in devising the best and most expeditious mode of doing the work, and contemplated the dispatch and facility with which I could work after all my apparatus was complete and in motion, and did not sufficiently consider the time that must necessarily be taken up in constructing and making this apparatus. I also at that time intended to have done a considerable part of the work in the town of New Haven, in the buildings which I own and then occupied there, but after viewing the works at Springfield, where their water works are at some distance from the principal armory, I relinquished the idea of doing any work in town and determined to do all my work on one spot. The superintendent at Springfield said to me that it would cost me four thousand dollars a year more to do the same in two places at two miles distant from each other than if it were all concentrated into one place. I now perceive that it would have been a very injudicious arrangement to have attempted to carry on the work in two places. I find that my personal attention is more constantly and essentially necessary to every branch of the work than I apprehended. Mankind generally are

not to be depended on, and the best workmen I can find are incapable of directing. Indeed there is no branch of the work that can proceed well, scarcely for a single hour, unless I am present. In consequence of this miscalculation I shall lose more time and be subject to a greater expense in erecting the necessary building than I expected."

* * * * *

"I have reason to believe that my general plan of arrangements is good—my confidence in it increases in proportion as the execution advances—my water works are not yet in motion, but are in forwardness. My arrangements for forging, filing, etc., are nearly completed. I have about sixty good men engaged, and a prospect of being able to procure such number as I may want. I am persuaded that I can do the work well, and that when I can bring all my works fairly into application I can do it with dispatch and to a profit to myself, provided I can be indulged as to time, and avoid pecuniary embarrassment in an early stage of the business.

* * * * *

It appears to me that many who have undertaken to make muskets will make but indifferent ones; that their system is such that they will not improve much by practice, and that their arrangements are in no way calculated for permanence or increasing progression.

I wish I had an opportunity of laying before you my whole plan and manner of executing the different branches of the work, and you had leisure to examine and compare them with the mode practiced in this and other countries. ;

* * * * *

Captain Decius Wadsworth, residing at New London, Ct., was by circular letter of the treasury department appointed inspector of muskets fabricated for the United States by contractors in the eastern states Dec. 28, 1798.

This brought him to the armory at Whitneyville and into close contact with Mr. Whitney. At the time Mr. Whitney arranged to go to Washington, Captain Wadsworth gave him the following letter to the secretary of the treasury, interesting alike for historic details of the condition of the works and gun making at that time, and for clearness and elegance of expression. Capt. Wadsworth afterwards became chief of ordnance.

CAPTAIN WADSWORTH TO THE SECRETARY.

NEW HAVEN, Dec. 24, 1800.

Sir: Mr. Whitney being about to proceed to the seat of government for the purpose of making a representation of the state of his factory of small arms, has requested me to address you on the subject.

I have great satisfaction in being able to declare that the progress already made by him leaves no room to doubt of his eventual complete success provided he receives suitable support and encouragement from the government.

The specimens of work which he will carry with him will speak for themselves. Lest it should be doubted whether the rest will prove of so good a quality, it may be right to mention that the specimens which he has proposed to carry with him may be justly considered as a fair sample of his work. I entertain not a doubt that the arms he is making, more especially in that which is the most difficult part (the Lock), will not only greatly exceed in point of workmanship the best which have been fabricated for that use in this country, but even be superior to any muskets for common use ever yet fabricated in any country.

It is well known that most of the French arms we possess are of an ancient fabrick; and the Charleville musket, after which we now pattern, is not in my opinion equal in point of workmanship to that of Mauberge or St. Etienne. It is said that some very great improvements have not long since been made in France in the construction of the lock. Doubtless it will be thought an object of importance to de-

termine whether those alterations are to be adopted or not in this country. I am acquainted with no person to whose care I should be willing to entrust the making of an experiment, or to whose sense and judgment the eventual adoption or rejection of such alterations might be so safely submitted.

It must be admitted, I believe, that Mr. Whitney at his factory unites more advantages for carrying on the manufacture of small arms upon a scale sufficiently large than the national armory at Springfield possesses; and he is capable of executing the same quantity of work with a much smaller proportion of manual labor. Where the eye of the workman is almost the only guide in fitting up the lock, not only a longer course of practice is requisite to ensure a tolerable degree of perfection in the execution; but after all the similar parts of different locks are so far unlike that they cannot be mutually substituted in cases of accidents. But where the different parts of the lock are each formed and fashioned successively by a proper machine, and by the same hand, they will be found to differ so insensibly that the similar parts of different locks may be mutually substituted. The extending of this principle to all the parts of a musket has been a favourite idea with Mr. Whitney from the beginning. It has been treated and ridiculed as a vain and impracticable attempt by almost all those who pretended to superior knowledge and experience in the business. He has the satisfaction, however, now of shewing the practicability of the attempt. Although I am of the opinion that there is more to please the imagination than of real utility in the plan, yet as it affords an incalculable proof of his superior skill as a workman, and is what I believe has never been attempted with success before, it is deserving of much consideration.

Although I have no reason to believe that you in the least distrust the abilities or character of Mr. Whitney, yet as I have had particular opportunity by an intimate acquaintance to notice the less obvious traits of his character, I

hope to be excused for making the observations which follow. His mechanical invention, ingenuity and ability no one I believe at present pretends to question. He is besides exempt from the common failing of men of that description, an ardent imagination and extravagant expectations which often blind them to the consideration of the difficulties and inconveniencies which attend a favourite plan. Patient, prudent, of mature reflection, diligent, economical, blest with sound judgment, it is rare to find a man uniting so many excellences, free from striking defects. He is therefore entitled to the highest degree of confidence, aided by which nothing need be feared except the loss of health or life, or those uncommon accidents against which prudence is not a sufficient guard. I therefore entertain a hope that an institution so highly deserving of national patronage and support will meet with the encouragement which it merits.

I have the honor to be with entire respect, your very obedient servant,

DECIUS WADSWORTH,

Inspector of Small Arms.

The Secretary of the Treasury.

The failure to complete the arms at the specified date made it necessary to obtain an extension of the time, and to secure still greater advances of money from the Treasury. To this end, and to secure the government against loss, a further bond was required, and one was given by ten of the substantial citizens of New Haven, interesting to us as showing not only the high estimation in which Mr. Whitney was held in New Haven, but the patriotic and public spirit of his fellow citizens.

INDEMNITY BOND TO THE UNITED STATES.

NEW HAVEN, Sept. 8, 1799.

Whereas, Eli Whitney has contracted with the United States to manufacture 10,000 stands of arms, for the execu-

tion of which he has given bond, and now needs an advance of 10,000 dollars to aid his progress, which the Secretary of the Treasury will advance on his procuring bond to account for the same in the delivery of arms:

We, to aid Mr. Whitney, and to encourage the manufacture, will join in such bond; provided ten or twelve will so join, he securing us by mortgage on his farm and works.

Agreed to by:—Simeon Baldwin, David Daggett, Pierpt. Edwards, Eneas Monson, Jr., Jeremiah Atwater, James Hillhouse, Elias Shipman, Timo. Phelps, Peleg Sanford, Elizur Goodrich.

OTHER ARMORIES PROPOSED.

Among the letters from Oliver Wolcott, there is one under date of Oct. 9, 1799, expressing his opinion that with good management it appeared to him possible to establish the manufacture of small arms on a permanent footing at the Armory of Mr. Whitney. He, also, had the idea that it would be a good plan to establish more than one armory at New Haven, and sought Mr. Whitney's opinion on the matter.

Mr. Whitney replied at considerable length, and gave many reasons why it would not be good policy to have another establishment in New Haven for the fabrication of arms, and objected so strongly that the proposition appears to have been dropped.

THE WHITNEY SYSTEM.

We have already seen that Mr. Whitney could never have consented to undertake the performance of the contract for such a large number of arms if he had not devised in his mind a plan by which it could be accomplished (page 135). He had, in fact, invented a new system of manufac-

ture, applicable to any product, and of untold value to the mechanic arts. In importance it cannot be thought to be inferior to the invention of the cotton gin, and its successful introduction at Whitneyville is the great and crowning glory of Eli Whitney's life.

Whitney was thus the father of the uniformity system in manufacturing; a system which has been of the utmost benefit to the human race, and which should be known as the *Whitney System*. Its originality is shown by many of Mr. Whitney's letters, and by contemporary evidence.

He made Whitney armory a school for the nation, sending out from it workmen and superintendents trained to his methods, to his system of uniformity and interchangeability of parts, and to the substitution of machine work for hand work. Not only this, he aroused the ambition of men to become skilled in their trade, to lose sight of hoary precedents and to exercise their minds as well as their muscles in shaping materials to their uses. His knowledge of materials and his ability to perform any mechanical operation, added to his superior intellect, made him a shining and respected example to those about him. Everyone appealed to him as the acknowledged leader for advice and directions, and thus the works grew—and not only superior arms were produced and sent forth, but a race of sentient, skillful mechanics, and just at the time when the young, growing republic needed every one.

We find that Mr. Whitney was called upon to send, and that he did send, a skilled armorer to the Government armory at Springfield, for the purpose of introducing his system there, and that he was himself sought by the United States Government to take charge of its most important armory at Harper's Ferry, and to transfer his machinery to it. But in addition to these generalities, history requires the facts upon which they are based. We therefore present in full copies of several letters hitherto unpublished.

MR. WHITNEY TO THE SECRETARY OF WAR.

In a letter to the Secretary of War, in June, 1801, Mr. Whitney writes :

"It has been my endeavor to erect such works as would be commensurate with the undertaking and to erect such machinery as appeared to me best calculated to facilitate and improve the manufacture of arms of the best quality. My system and plan of operations are, I believe, entirely new and different from those heretofore pursued in this or any other country."

"It was the understanding and expectation of the Secretary of the Treasury with whom I contracted, that I should establish a manufactory on the principles which were then pointed out and explained to him. This system has been uniformly pursued from the beginning, and though it has required more time to execute this plan than I at that time contemplated, it has been successfully reduced to practice with less expense than I then apprehended would be required, and the machinery in its operation exceeds my most sanguine expectations. It not only abridges manual labor but gives a degree of perfection to the work beyond the power of the most skillful workman in the usual method."

"I had the honor last winter to exhibit some specimens of my work, and the principles on which these specimens were made, to His Excellency Mr. Jefferson, of which he highly approved, and to whom permit me to refer you. You will find a musket of my manufacture in the Treasury office which you will be pleased to examine."

"I am desirous of making you fully acquainted with my proceedings in this undertaking, and with the construction of my works. Should you be passing through this place, I should deem it a particular favor if you will call and take a view of them. I flatter myself they will meet your full and entire approbation."

“Arms manufactured by inexperienced workmen, without method, and without the assistance of the necessary implements and machinery, must be of an inferior quality. When I entered into the contract it was particularly enjoined upon me ‘to do the work well if I took much more time.’ ”

GOVERNOR JONATHAN TRUMBULL TO MR. WHITNEY.

In 1802 the State of Connecticut made application to Mr. Whitney for information as to the expense of small arms for the State, as shown by the following letter from Governor Trumbull :

LEBANON, 15th March, 1802.

SIR: By a resolution of the General Assembly, passed at their last October session, I am requested “to procure information what would be the probable expense of 2,000 stand of good and well constructed small arms and to lay the same before the Assembly in May next.”

I have therefore to request that you will be pleased to inform me the price at which you could supply the number required, and at what time they may probably be completed, in case the State should eventually resolve to have them procured. With much regard and esteem, I am, sir,

Your obedt. servant,

JONA. TRUMBULL.

Eli Whitney, Esq.,

New Haven.

In addition to Mr. Whitney's engrossing labors at the Armory he found time to discharge his duty in public affairs in other directions. During the war of 1812 he took an active part in the defense of New Haven, and was able to supply a number of men from the works in Hamden.

Under date of Aug. 25, 1814, Governor John Cotton Smith, of Hartford, wrote in reply to an application by Mr. Whitney: “Agreeably to the request contained in

your letter written in behalf of the committee of defense at New Haven, I have directed the Quartermaster-General to forward to your care the number of pickaxes and shovels you desire from the arsenal of the State."

He also frequently took a prominent part in the general town meetings, and was several times called upon to preside as moderator, and to act as auditor of the accounts of the town. He was justice of the peace. By the people of the town he was generally known as "Squire Whitney," and is so referred to in the town records.

VILLAGE OF WHITNEYVILLE.

We cannot pass over without notice the early effort of Mr. Whitney to provide comfortable homes for his workmen and superintendents. He built the row of stone two-story houses at the base of Mill Rock for their benefit. At that date the dwellings were costly and superior in construction, and they stand to-day as excellent habitations. This paternal provision by Mr. Whitney for the comfort and well-being of his employees opens up to us a pleasing view of his kindly, humane and benevolent spirit, which was often manifested in other ways. Mr. Whitney was one of the first to lead in this direction, and to set an example which has been too tardily followed by others.

CORRESPONDENCE WITH ROBERT FULTON.

The difficulties encountered by Mr. Whitney in defending his right under the cotton gin patent, attracted the attention of Robert Fulton, then engaged in applying steam power to the propulsion of boats, and who being also under the necessity of seeking the aid of the courts to define and maintain his rights sought the advice of Mr. Whitney. His letter to Mr. Whitney tells the whole story:

NEW YORK, MARCH 10, 1810.

MR. WHITNEY, SIR:—As you have had much to do with law in defending your patent will you have the goodness to inform me if you ever obtained an injunction, if so, in what case and who was the judge. Any information which you can give me on the difficulties which were presented to your obtaining justice, and by what construction of the Patent law you did obtain it, or was opposed, will much oblige your most obedient ROBT. FULTON.

In a postscript he adds :

There has been a combination at Albany for the express purpose of evading the steamboat patent. They adopt all my principles and only change the combinations in a small degree. There are two boats building which probably will be spoiled by errors in proportions, but should they succeed it will be a case of some importance to inventors and patentees, on which I shall have to try the strength of the law.

No. 133 Chambers street, where I shall be happy to see you should you come to New York.

NEW YORK, APRIL 4, 1811.

DEAR SIR:—I return you my thanks for your kind and satisfactory letter. It will give me great pleasure to see you on your arrival in New York. You justly remark that in proportion to an invention being beneficial to the public, unprincipled individuals feel interested in depriving the inventor of his mental property; of this you, Sir Richard Arkwright and Mr. Watt have had more experience than any other men, and you have done more for mankind. Our courts are beginning to see the importance of holding out encouragement to men of inventive powers by guarding their rights, but to this end inventors and patentees must combine to defend themselves against the many.

After taking up and laboring through the difficulties of the steamboats—a subject which was universally ridiculed as impracticable—after proving their practicability, and utility to the world, and accommodating the public with a conveyance from New York to Albany, which for elegance, convenience and rapidity is superior to any conveyance on this globe, and which should be considered an ornament to the arts in our country, a company of speculators at Albany, without the least mechanical knowledge, without the least pretention to invention, have built two boats in which they have copied me exact, with a hope that the imperfection of the law will permit them to run and earn money to contend with us in law until the suit be decided, to prevent which, I am about to apply for an injunction and sought your case as one in point. As my suit will be on a conspicuous object, and one of magnitude, all artists and inventors are highly interested in the discussion. I shall perhaps be under the necessity of soliciting your kindness to attend as evidence of the boats being copies from me. With sincere esteem and respect, your most obedient,

ROBT. FULTON.

E. Whitney, Esq.

NEW YORK, November 25, 1813.

DEAR SIR: This will be presented to you by Mr. DeLacy. * * * * *

Mr. DeLacy will explain to you the merits of the case and the positive evidence of originality as far back as 1809–10, as per Mr. Latrobe's deposition, with the presumptive evidence of my publication on canals in 1796. The honest truth is I had in contemplation to make steamboats draw after them loaded boats as early as 1802–3, of which Mr. DeLacy will show you in a letter to him two plans, and my reason for preferring flat-ended boats which can come close home to each other, thereby avoiding a multiplication of bow resistance which is always greater than friction, and having only friction to contend with, whereas draw

boats with sharp bows and sterns after a steamboat, and you have bow resistance and friction also to overcome on each succeeding boat. I think there cannot be much doubt but all these investigations and combinations existed in me long before Mr. Sullivan thought of steamboats, which was not until years after my boats were running on the North River. I am, sir, with esteem and respect,

Your most obedient,

ROBT. FULTON.

Eli Whitney, Esq.

At the age of fifty-one, in the year 1817, Mr. Whitney married Miss Henrietta F. Edwards, youngest daughter of the Hon. Pierpont Edwards and grand-daughter of Rev. Jonathan Edwards. In 1822 he was seized with the severe malady which terminated his life in 1825.

Mr. Whitney had, in an eminent degree, a creative, organizing mind, god-like qualities, which he delighted to exercise. Original and independent in his conceptions he devised the shortest and most direct methods to accomplish any end. Traditions and prejudices which clouded the vision of most men seemed to vanish before him. He was singularly free from prejudices and was above the thrall-dom of precedents. With him, when an end was to be attained or a machine to be made, the question was, not how do others do this, but what is the best way to do it? There seemed little or no barrier to his power of shaping and moulding materials to his ends. Having been brought on the cotton plantation face to face with a problem which to those most deeply interested seemed insoluble he quickly solved it, and by the simplest and most direct combination produced the desired results. His device, like that of the Morse recording instrument, remains essentially the same to the present day.

We may believe that this triumphant success, so clearly the result of his own mental operations, strengthened and emboldened his mental faculties, giving him new courage

for other undertakings. It required not only originality, but great boldness and self reliance to step out so far beyond the boundaries of experience and precedent at that time and undertake the manufacture of ten thousand muskets for the United States.

Of the value to the world of Whitney's invention of the cotton gin, and of his introduction of machine work and the uniformity system, it is impossible to form any just estimate. His name goes to posterity, side by side with Watts', Arkwright's and Fulton's.

Lord Macaulay is quoted as saying:* "What Peter the Great did to make Russia dominant, Eli Whitney's invention of the cotton-gin has more than equalled in its relation to the progress and power of the United States."

In personal appearance Mr. Whitney is described by his contemporaries as beyond the medium statue, erect, dignified and elegant in his manners. He had a high sense of honor in all his social and business relations, and he never avoided or failed to meet his business obligations. His society was courted everywhere. He had a winning, refined and benign expression of countenance, which truthfully revealed his disposition. The steel engraved portrait, the frontispiece of this history, is from the life-size portrait, painted by King, of Washington, a few years before Mr. Whitney's death, and now in the possession of his son. This painting is considered an excellent likeness, and this likeness is well preserved in the engraving.

REMINISCENCES OF WHITNEY BY THE ELDER SILLIMAN.

Professor Silliman, Sr., in his Reminiscences of Mr. Whitney, says:

"The operations of Mr. Whitney's mind were not so remarkable for rapidity as for precision. This arose not from the want of mental activity and ardor of feeling but from

*Our First Century, Devens, p. 158.

habitual caution, and from his having made it his rule to be satisfied with nothing short of perfection. Hence, he delayed to mention a projected invention or improvement until he was entirely satisfied with his own views. He did not disclose them until in his own opinion he had hit upon the best conception, and the best means of execution, and when these were attained, and not before, he brought his project forward, or more frequently, put it into successful operation before he divulged his plan. Hence he rarely found it necessary to retrace his steps. In early life he so effectually disciplined his mind that he could not only confine it to the contemplation of one subject but he could suspend his train of thought and the execution of his inventions and resume them at distant intervals without confusion or loss. He was very patient of interruption and would cheerfully leave his own engagement and suspend his mechanical arrangements, his repasts, or his business, to attend to the numerous applications which were constantly made to him both by those who had, and those who had not, any proper claims to his time and services."

"I was frequently led to observe that his ingenuity extended to every subject which demanded his attention; his arrangements even of common things, were marked by singular good taste and a prevailing principle of order. The effect of this mental habit is very obvious in the disposition of the buildings and accommodation of his manufactory of arms, although owing to the infirmities of his later years, and to other causes, his arrangements were never finished to the full extent of his views. The machinery has great neatness and finish, and in its operation evinces a degree of precision and efficiency which gratifies every curious and intelligent observer. I have many times visited the establishment with strangers and foreigners who have gone away delighted with what they have seen. Under all of the successive administrations of the general government, from that of the first President Adams, repeated contracts have been obtained for the supply of arms."

"A few years before Mr. Whitney's death it became necessary to renew the mill dam at the manufactory, it having been originally constructed for a flour mill and being both defective in plan and dilapidated by time. Mr. Whitney, then in declining health, superintended every part of the business in person, although its execution was protracted almost into the winter, when massive stones were to be laid in the midst of cold water and ice. It is necessary only to inspect the work and the flumeways and the walled borders of the river below and the canal which he constructed to take the water from the dam to the forging shop to be satisfied that both genius and taste presided over there useful though unostentatious constructions."

"With all his contemplative ingenuity and habitual attention to mechanical detail, Mr. Whitney did not allow his mind to be narrowed down to a limited horizon. His views of men and things were on the most enlarged scale. The interests of mankind, and especially of his native country as connected with government, liberty, order, science, arts, literature, morals, and religion were familiar to his mind, and he delighted in conversing with men of a similar character. His amiable and generous disposition also prompted him strongly to social intercourse. His countenance and person were so prepossessing as to excite an active interest, especially, whenever he spoke, his gentlemanly manners marked by a calm but dignified modesty, were still those of a man not unconscious of his own mental powers; he was therefore self-possessed, while a winning affability and agreeable voice made his conversation as attractive as it was instructive. He abounded in information and in original thoughts. He was always welcome in the best society both at home and when he traveled; the first men of the country and from almost every state in the Union called on him and much of his time was necessarily spent in society.

PRESIDENT DAY ON ELI WHITNEY.

At the grave of Whitney the accomplished scholar, Jeremiah Day, president of Yale College, said: "How frequent and how striking are the monitions to us that this world is not the place of our rest! It is not often the case that a man has laid his plans for the business and the enjoyment of life with a deeper sagacity than the friend whose remains we have now committed to the dust. He had received as the gift of Heaven a mind of a superior order. Early habits of thinking gave to it a character of independence and originality. He was accustomed to form his decisions not after the model of common opinion, but by his own nicely balanced judgment. His mind was enriched with the treasures which are furnished by a liberal education. He had a rare fertility of invention in the arts; an exactness of execution almost unequalled. By a single exercise of his powers he changed the state of cultivation and multiplied the wealth of a large portion of our country. He set an example of system and precision in mechanical operations which others had not thought of even attempting."

ELI WHITNEY.—(2d) b. in New Haven, November 24th, 1820; m. June 17, 1845, Sarah Perkins Dalliba, dau. of Major James Dalliba, of the United States Ordnance Corps, who was at the battle of Lundy's Lane. 'Children: 1. Eli, who d. at age of four months; 2. Eli; 3. Susan Huntington; 4. Henrietta Edwards. At the age of 18, in the year 1838, Mr. Whitney entered the sophomore class in Princeton College and graduated there in 1841.

In the year 1842 he took charge of the Armory and the other property inherited from his father, and has since greatly extended and improved them. He has been the master mind of the establishment at Whitneyville and has shown a high degree of inventive skill and capacity in the management of the complicated affairs of the business.

Many large contracts for arms with our own and with foreign governments have been filled by him to the entire satisfaction of the parties. Over four hundred thousand (400,000) stands of arms and revolvers have been sent out from the Armory since he took charge of it. The buildings have been greatly extended and improvements made, of which an account has already been given—pages 139–143. We owe also to Mr. Whitney's foresight and fine taste the beautiful double line of elm trees bordering Whitney Avenue for two miles; most of them set out at Mr. Whitney's cost in the years 1837 to 1845 to replace the double row of Lombardy poplars, which were originally planted by his father, and which began to die out from age and disease.

Mr. Whitney was the active proposer and promoter of the enterprise which gave a full supply of pure water to the city of New Haven, and has shown engineering abilities of a high order in his skillful erection of the great dam, the laying out of new roads necessitated by the formation of the lake which bears his name, the removal of the covered bridge and in many ways connected with the enlargement of the buildings and general arrangement of the Armory. He was the first to suggest the use of East Rock for a public park for the city of New Haven.

The Whitney dam and the New Haven water works have already been briefly noticed. About 250,000 feet of stone were used in building the dam. It is placed on solid rock. The base, or bed, has an inclination up stream, which insures great safety to the structure. Mr. Whitney gave his personal attention to the planning and the details of the construction, and was the contractor for the entire water works, C. McClellan & Son being only nominally associated with him as contractors. The profit or the loss was to be Mr. Whitney's. His predecessor, the Hon. Aaron Skinner, had a plan for water works on a much more limited scale, particularly so far as the lake and the water power were concerned. At the time Mr. Whitney undertook to build the

HISTORICAL AND DESCRIPTIVE.

water works for the city it was a very heavy and doubtful undertaking. There was much opposition to the enterprise in New Haven, and collections could not be made during a most severe financial crisis, soon after President Lincoln's election. The charter was assigned to Mr. Whitney on condition that he should build the entire water works. The corporators were Messrs. Henry L. Hotchkiss, Ezra C. Read, O. F. Winchester, James Brewster, and others. Mr. Whitney chose a board of directors, with E. C. Scranton, President. Fortunately the armory had received large contracts for arms, and it was kept running night and day making the money required to carry on the building of the water works, and to contend with the most violent opposition. But a small part of the contract price (\$350,000), was paid in cash, most of it was in stock and bonds, so that practically the works were built by Mr. Whitney, with his own means and credit.

ELI WHITNEY, JR. (3d) b. Jan. 22, 1847; m. Sarah Sheffield Farnam, Oct. 22, 1873. Six daughters.

Mr. Whitney entered Yale College in 1865 and graduated in 1869. He has been associated with his father in the management of the affairs of the Whitney Arms Company. He has served as one of the commissioners of the East Rock Park. In 1884 he was elected alderman of the city of New Haven, and is a member of the Board of Public Works.

WHITING.

CAPTAIN JACOB WHITING, of Hamden, commanded the company of one hundred men sent from the town, in October, 1814, to aid in throwing up earthworks at Beacon Hill, for the better protection of New Haven.

Towards the end of the last century:

NATHAN WHITING, m. O. Dorman. Children: Daniel W., George D., Henry S., and one daughter.

HAMDEN CENTENARY.

GEORGE D. WHITING, b. in Hamden, June 28, 1819; m. Julia E. Buell, b. in Killingworth, Ct., Jan. 25, 1820. Children, Edward M., b. July 28, 1841; George W., Jan. 30, 1843; Daniel W., Sept. 12, 1844; Esther L., Jan. 26, 1846; Geo. W., Mar. 15, 1848; Nathan R., July 5, 1850; George W., July 16, 1853; Julius A., Aug. 11, 1856; Julius A., Jan. 16, 1859; Ellsworth M., Oct. 18, 1862.

TAXATION AND LAND RECORDS.

BY ELLSWORTH B. COOPER.

TAXES were laid, or assessed, and the grand list was kept in the old English currency, £. s. d., (pounds shillings and pence,) until the year 1799, when for the first time in the record, we find the rate of assessment expressed in terms of the dollar—six mills on a dollar.

At the special town meeting, in November, 1786, it will be observed, (p. 210) that "Geo. Augustus Bristol was chosen collector of taxes that are, or may be laid by the State on the list for the year 1785;" and that "this town tax themselves 4d. on the pound for defraying the necessary expense arising upon this town for the year ensuing."

The amounts collected each year and the rate of taxation are shown by the following extracts from the Records:

List of 1786.—Amount collected by John Hubbard, Esq., Collector of the Town Rate on List of 1786, £173.13.6—4d. on the pound.

List of 1787.—Amount collected by Hezekiah Warner, Collector of the Town Rate, £166.13.9½—4d. on the pound.

Mr. Warner was to receive "five pounds as a compensation for collecting the Town Tax."

List of 1788.—Amount collected by Hezekiah Warner, Collector of Town Taxes, at 3d. on the pound, £124.8.4½.

List for 1789.—In Selectmen's Book, Vol. I, p. 41, it is stated that "The Grand List of the Town of Hamden for year 1789 is £9,584.9.5½—Two pence half-penny on the pound. Collected by Mr. Geo. A. Bristol, £99.16.9½.

List for 1790.—Vol. I, p. 41, the Grand List for 1790 is £10,755.16.3½—one penny half-penny Tax laid on said list. Mr. Benjamin Wooding, Collector, £67.4.6.

List of 1791.—Two penny tax, collected by Capt. Samuel Bellamy, £87.15.9. Selectmen's Book, p. 353.

Dec. 10, 1792.—At a Town Meeting it was voted "A tax of two pence on the pound on the polls and ratable estate payable the first day of February next * * and that Enos Bradley collect the same." Amount collected, £89.13.9.2.

Dec. 9, 1793.—A tax of two pence on the pound was voted, payable the 1st day of March next; and Samuel Homeston was chosen Collector.

Dec. 8, 1794.—Mr. Hummiston is credited with tax collected, £93.5.9½, also £142.7.1½; and Mr. Timothy Bassett, £191.11.4.

Dec. 8, 1794.—A tax of three pence on the pound was laid and Samuel Humiston was chosen Collector.

Dec. 14, 1795.—A tax of one penny half-penny was laid for repairing highways, payable March 1, 1795, and a tax of three pence half-penny for Town Expenses, and it was voted that Timothy Bassett collect the same. The meeting was adjourned to Dec. 22, 1795, when it was voted to "re-scind the vote passed last meeting relative to mending highways by a tax," and it was voted to add a half-penny to the tax laid last meeting to defray the town expenses.

Dec. 10, 1796.—At a town meeting a tax of four pence on the Pound was laid "payable on the first of February next," and Levi Bradley was chosen Collector. Amt. Collected, £194.15.

List of 1797.—A four pence tax on List of 1797, collected by Capt. Asa Atwater, amounted to £204.10.5.2.

List of 1798.—Mr. Eli Goodyear collected a two pence tax, £100.10.11.3.

List of 1799.—Mr. David Potter collected a six mill on the dollar tax, amounting to \$253.65 cts.

List of 1800.—Mr. Javin Wooding collected 8 mills on the dollar amounting to \$326.68.

List of 1810.—2 cents on the dollar. Amount of Grand List was \$35,072.96. Tax \$701.46. Allen Dickerman, Collector.

List of 1820.—5 cents on the dollar, Jesse Gilbert, Collector. Amt. \$1,229.95.

List of 1830.—Amount of Grand List, \$22,136.89. Tax four cents on the dollar. Amount \$885.43. Elihu Dickerman, Collector.

List of 1840.—Amount of Grand List, \$24,820.34, 5 cents on the dollar. Amount \$1,240.63. Henry Peck, Collector.

List of 1850.—Amount of Grand List, \$26,844.51; 5 cent tax. Amount of \$1,342.23. Russel S. Jacobs, Collector.

List of 1860.—Grand List of \$11,974.42; two mills, amount of tax, \$2,394.88. Harvey Hale, Jr., Collector.

List of 1870.—Grand List \$1,539,941. Tax ten mills. Amount \$15,399.41. Henry L. Bristol, Collector.

List of 1880.—Grand List, \$1,623,505. Tax ten mills, amount on Rate Book, \$17,197.05. Jesse Warner, Collector.

List of 1885.—Grand List, \$1,680,461.40. Tax ten mills, payable Sept. 10, 1886. Jesse Warner, Collector.

HAMDEN LAND RECORDS.

There are now forty volumes of Hamden Land Records. Up to the time of the incorporation the records of transfers of land were kept in New Haven. The first deed recorded in Hamden in Volume I, after the incorporation, bears the date, July 5th, 1786; and is from Anthony Thomson, Jr. to Joel Goodyear, conveying about five rods of land. Witnesses to the deed: Samuel Atwater, Simeon Bristol. It was acknowledged before Simeon Bristol, Justice of the Peace, and recorded by Simeon Bristol, Clerk.

The last deed in Volume I is dated Jan. 7, 1792 and is from Simeon Bristol to Hezekiah Dickerman. It was witnessed by Asaph Nichols and Mary Bristol.

The last deed recorded by Simeon Bristol is found in Vol. V, p. 148, given by James Bassett to Abigail and Sarah Bassett for the consideration of Love and Good will. This deed conveys one certain tract of land lying in said Hamden at a place formerly called Popple Hill; bounded east on the Country Road, south on land of Thomas Leek, west on highway, and north on land of John Bassett; containing thirteen acres, be the same more or less. The date is April 2d, 1801, but it purports to be recorded Dec. 2d, 1781. The following deed is from John Wood to Giles Cooper, dated Nov. 10, 1801, and was recorded by Russel Pierpont, Clerk, Dec. 15, 1801, and was acknowledged before John Hubbard, Justice of the Peace. Russel Pierpont was Town Clerk for 1801-1842. In Vol. XX, p. 276, is the last deed recorded by Russel Pierpont, dated April 2, 1842; recorded Sept. 15, 1842; and on page 277, is the first deed recorded by Leverett Hitchcock, Town Clerk: dated Sept. 27, 1842; recorded Oct. 11, 1842; and the last signed by him as Town Clerk was recorded in Vol. XXXIV page 207, Nov. 20, 1875.

LIST OF PERSONS WHO HAVE HELD THE OFFICE OF TOWN
CLERK OF HAMDEN TO 1876.

Simeon Bristol,	.	.	.	.	1786 to 1801
Russel Pierpont,	.	.	.	.	1801 to 1842
Leverett Hitchcock,	.	.	.	.	1842 to 1875
Ellsworth B. Cooper,	.	.	.	.	1876 ———

ADMISSION OF FREEMEN.

THE phraseology of the record of the town in regard to the admission of freemen varies from time to time. The record sometimes states that the persons were admitted to be "Freemen of the Corporation"; sometimes to be "Freeman of this Town of Hamden"; "Freemen of the Corporation of the Town of Hamden"; or, "free of this Corporation"; or "made free of the Corporation of the Town of Hamden." In 1800 the candidates were "admitted and sworn as freemen of this corporation on certificate as the law directs." In 1801 admissions were made on certificate of the Selectmen. In 1802 on the certificate of the civil authority and Selectmen. In 1804 and after the record reads: "Admitted Freemen of the State on certificate from the Civil Authority and Selectmen of said town." In 1818 the record reads "At a meeting of the Civil Authority and Selectmen of the Town of Hamden legally warned and held, the following persons were examined and found qualified for Freemen of the State of Connecticut and duly sworn as the law directs." In 1819 it reads: "At a meeting of the Electors of the Town of Hamden, etc., the following persons were examined by the Town Clark and Selectmen of said town and found qualified for Electors of this State, and duly sworn as the law directs as by their certificate."

Dr. Bronson writes in his *Chapters on the Early Government of Connecticut*, (Henry Bronson, M. D.), New Haven Hist. Soc. Papers: (iii, 313.) "The Freemen of Connecticut under the Constitution were a kind of popular aristocracy holding a midway station between the plebian and patrician classes. Supported seemingly by both, they became the trusted pillars of the Commonwealth. Evidently they were not numerous. What their number was when the Constitution was adopted is unknown; but in the first ten

years which followed I cannot find that more than twenty-three were admitted. During the whole life of the Constitution, from January, 1639, to October, 1662, nearly twenty-four years, two hundred and twenty-nine admissions are on record; while the increase of population may have been three thousand, one-quarter of them males of legal age. The facts indicate that only a small proportion, certainly a minority of those of twenty-one years and over, were Freemen, some of them doubtless because they did not desire the honors if they must also bear the burdens. In Massachusetts, where none but church members voted, the Freemen in 1670, according to Palfrey, were only one in four or five of the male adults. (iii, 41.) In Plymouth Colony the people were so indifferent that it was customary 'to persuade, sometimes compel, them to be free.' **.

LIST OF PERSONS ADMITTED FREEMEN OF THE TOWN OF
HAMDEN, 1785-1835.

At a meeting of the freemen of the town of Hamden, held on the 19th day of September, 1786, the following named persons "were admitted to be Freemen of this Corporation:"

1786.—Joseph Pardy, Levi Bradley, Asa Goodyear Jr., Medad Alling.

1787.—Titus Goodyear, Eli Bradley, Amasa Bradley, Jabez Bradley, Ebenr. McGills, Amos Dickerman, Dan'll Bradley Junr., Nathan Alling Junr., Jabez Turner.

1789.—Ezra Kimberly.

1790.—Jeremiah Crittendend.

1792.—Jared Goodyear.

1794.—Joel Ford, Caleb Atwater, Luman Frisbee, "admitted Freemen in open Freemen's meeting."

1795.—Levi Tuttle, John Bassett, Elisha Atwater, Eli Goodyear, Lyman Bradley.

*(Narrative of the Royal Commissioners, 1666.)

1796.—Jason Bradley Jr., Bethel Todd, Leverett Kimberly, Russell Pierpont, Timothy Potter Jr.

1797.—Elam Ives, Zadoc Alling.

1798.—Jessee Peck, Amos Benham, Charles Tuttle, George Benham, Daniel Chatterton, Abijah Brooks, Levi Goram.

1799.—Samuel Hitchcock Jr., Jared Alling, Jessee Ives, Elam Bradley.

1800.—Isaac Munson, Enos Dickerman, Joseph Munson, Beach Munson, "were made free of the corporation of the town of Hamden."

At a meeting of the Freemen of the town of Hamden, Sept. 15, 1800, the following persons were admitted and sworn as Freemen of this corporation on certificate as the law directs :

Samuel Dickerman, Benoni Dickerman, Ichabod Hitchcock, Elisha Leek, Jabez Munson, Jessee Potter, William Shares, Joseph Gilbert 3d, Timothy Andrews, Dan'll Doolittle, Thomas Gill, Enos Tuttle Jr., Alling Potter, Eli Potter, Justus Potter, Hezekiah Dickerman, Jessee Mansfield, Eliada Hitchcock, Jeremiah Peck, Amos Bassett, Jonathan Booth, Jared Munson, Jabez Munson Jr., Josiah Mansfield, Simeon Todd, Aleck [?] Todd, Jessee Johnson Jr., Joseph Heaton, Roger Dorman, Samuel Cooper, Jessee Warner, Samuel Warner, Jonah Warner, Ebenezer Warner Jr., Isaac Warner, Daniel Dorman, Theophilus Bassett, Timothy Leek Jr., Isaac Woodin, Jonah Ford, Joseph Hummiston, Amos Warner, Timothy Turner, Charles Alling Jr., Ira Woolkutt, Jessee Bradley, Simeon Warner, James Peck, Pratt Jones, John Sperry, Alexander Booth.

1801.—Enos Atwater, Anthony Thompson, Hezekiah Bassett Jr., Dimond Robberts, Isaac Hitchcock, Thomas Gilbert, Caleb Doolittle Jr., Gideon Hurlbut, Joseph Peck, John Leavenworth, Jared Leavenworth, Benjn. Gaylord Jr., Alling Gaylord, Moses Ford Jr., Aaron Perkins, Benjn. Woodin, Ezra Bradley Jr., Miles Sperry, were admitted Freemen of this corporation on certificate of the Selectmen. Test, Simeon Bristol, clerk.

1802.—Eli Dickerman, Alling Dickerman, Amos Bradley Jr., Jeremiah Alling, Seymour Bradley, John Potter, Leverit Mix, Jared Potter, Roger Alling, John Morrison, Silas Hotchkiss, Nicholas Howel Jr., Benjn. Peck, Truman Sanford, Josiah Todd, Malaci Tyler, Jazon Potter, Ebenr. Mansfield, Chauncey Dorman, David Brockett, Medad Todd, Jesse Cooper, Amos Bradley 3d, Reuben Doolittle, Micajah Talmadge, Matthew Gilbert Blakslee.

1803.—Amos Bradley, Elam Dickerman.

1804.—Ezra Bradley, Justus Humiston, Asa Bradley, Obed Blakesley, Levi Alling, Elisha Woolcott, Joseph Smith, Samuel Goodyear.

1805.—Joel Thompson, Russell Gaylord, Chester Potter, Lyman Tuttle, Lyman Atwater, Miles Dickerman, Roswell Lee, Lyman Munson, Benjamin Spencer, Jared Atwater, Jr.

1806.—Alvin Bradley, Jr., Leverett Dickerman, Andrew Goodyear, Obed Bradley, Jesse Doolittle, Benjamin Mix, Joseph Johnson, Jr., Daniel Gilbert, Isaac Johnson, Timothy Cooper, Jr., Moses Gilbert, Jr., Ambrose Tuttle, Stephen Ford, Jr., Jared Ives, Jeremiah Gilbert, Ansel T. Lesley.

1807.—Return E. Jones, Eldad Bassett, Ransom Benham, Samuel B. Kingsley, Manly Dickerman, James Talmadge, William Peck, Eliphlet Gregory.

1808.—Elizur Cadwel, Zebe Munson, John Bradley, Amos Allen, Richard Wilson, Stephen Hitchcock, Seymour Goodyear, Leveritt Tuttle, Russel Ives.

1809.—Jesse Blakslee, Moris Kimberly, Chauncey Dickerman, Jr., Haris Bradley, Silas Barns, Bodereck Kimberly.

1810.—Medad Atwater, Jared Bassett, James Thompson, Luis Goodyear.

1811.—Stephen Atwater, Whiting Dickerman, Lyman Ford, Martin Leonard.

1812.—Jason Dickerman, Job L. Munson, Jr., Asa Alling, Amos W. Sanford, Sheldon Peck.

1813.—Jonathan Deming, Giles Dunbar, John Pardee.

1814.—Isaac Tuttle, Aaron Chatterton, Job Potter.

1815.—James Atwater, Ebenezer Mansfield, Jr., Ambrose Perkins, Lyman Alling, Alfred Bassett, Aaron T. Potter, Lyman Tuttle.

1816.—Seymour Dickerman, Parsons Ives, Orrin Todd, Hezekiah Brockett, John L. Mansfield, Russell Munson, Henry Meriman, Jere Davis.

1817.—Starling Bradley, Asa Bradley, Stephen W. Atwater, Chester Dickerman, Lyman Goodyear, Horace Goodyear, Isaac Benham, Caleb Thomas, Jr., Jason Bassett, Elias Bassett, Theophilus Bassett, Jr., Jared Atwater, Jr., Timothy Potter, Jabez Potter, David Warner, Isaac Newell, Elias Mansfield, Lyman Mansfield, William Homiston, Samuel Alling, Deering Monson, Zenos Warner, Elam Warner, Nathan Kingsbury, Samuel Manser, John Gorham, Timothy Andrews, Jr., Harvey Bassett, Eli Dickerman, John Perkins, Jr., Levi Perkins, Jacob Whiting, Joseph Hough, Heaton Andrews, Labon Downs.

1818.—The following persons were examined and found qualified for Freemen of the State of Connecticut and duly sworn as the law directs :

1818.—Levi Baldwin, Michael Leak, Merit Dorman, Austin Gilbert, Joseph Potter, Elihu Blake, David Leak, Major Goodsel, Stephen Babcock, Oliver B. Potter, Eliphallet Smith, Silas Sanford, Chauncey Preston, William Ramsdell, Ezra Alling, James Ramsdell, Justus Warner, Jacob Whiting, Ira Perkins, Benj. Peck, Levi Munson.

1819.—Enos Brooks, Albert Goodyear, Titus Doolittle, Jr., Joel Dorman, Jesse T. Goodyear, Russell Bradley, Isaac Munson, Hiram Sanderson,

1820.—Daniel Carrington, Barakiah Fairbanks, Ammi M. Pierpont, Aaron Kilbourn, Markus Talmadge, Josiah Brinsmade, Jason Wooding, Jr., Herman Doolittle, Horace Potter, Lewis Peck, Truman Potter, Jesse Warner, Ezra Cooper, Amos Persons, Stephen Warner.

1821.—James M. Ford, Charles Cooper, James H. Benchley, Leveritt Hotchkiss, Russell Leek, Joseph C. Burk.

1822.—Joel Munson, Alanson Tuttle, Enos Dickerman, Jr., Martin Stevens, Alen [?] Terrel, Henry Gilbert, Ezra Allen, 2d, James Bassett, Jr., Jesse Gilbert, Jr.

1823.—Jesse Merrick Mansfield, Nathaniel Ford, Seymour Potter, Merritt Ford, Jonathan Dickerman, Amos R. Hough.

1824.—Elihu Dickerman, Jesse Tuttle, Jr., Henry Hill, Elias Ford, Eaton Bassett, Henry P. Potter, Stephen C. Gilbert.

1825.—Silas Bradley, Russel Alling, Hervey Ford, Libbeus Dickerman, George B. Brockett, Rufus Dorman, Charles Wooding, Alvah Monson, Lamon Doolittle, Gibbs Gilbert.

1826.—Horace Leek, Samuel Clark, Elijah Hart, Horace Doolittle, Henry Peck, Zealous Warner, Henry Wooding, Alfred Dorman, Marcus Merriman, Chandler Sanderson.

1828.—Noyes Riggs, Joshua Atwater, Hiram Parker, Israel Kelsey Jr., George Goodsel, David Sanderson, Amie Munson, George Atwater, William Simpson, Marcus Good-year, David Bassett. "Loyal Todd was admitted on his certificate from the town clerk of North Haven."

1829.—Isaac Jones, Jesse G. Ives, Lyman Hotchkiss, Henry E. Sanger.

1830.—Amos Peck Junr., Harvey Leek, George Kimberly, Edmond D. Bradley, George Dorman, Alen C. Bradley, Albert Dickerman, Bial Leonard, Alfred Cooper, Harvey Bradley, Lewis Todd, Elias Turrel, Griswold I. Gilbert, Joel G. Warner, Sackett G. Benham, Julius S. Tolls.

1831.—Joseph A. Smith, John A. Arnold, William F. Bradley, Lewis Perkins, Allen Tuttle, John Potter, Luther Potter, Beri S. Tuttle, Charles H. Atwater, William Bradley.

1832.—Enos Bassett, Dana Leek, Ethel Mix, Edmond S. Doolittle, Otis Peck, Ezra Austin, Charles Baldwin, Caleb Wilson, Alfred Dickerman, Albert Sperry, William H. Turner, Major Smith, Horace Tuttle, Henry Ives.

1833.—Merit Alling, Noah Wolcott, Jared D. Gorham, Russel Warner, Vinas Wooding; Levi Warner, Uri Todd, Jotham Bradley, Alva Warner, Henry Leek, Lewis Merri-
man, Amos Frost, Edward L. Jacobs.

1834.—Lyman Gibbard, Austin Eaton, Edward Nichols, Joseph W. Flagg, Thomas Morgan, Henry Handy, Russel H. Cooper, Richard Wilson Jr., James Warner, Chauncey Nutt, Willis Doolittle, Lonzo Warner, Miner Warner, Harley Warner, Chauncey Alling, Willis Churchill, Abner Warner, William Todd, Richard Wood, Amos Tuttle, Asa K. Alling, Walter Warner, William H. Marther, Ezra Bradley, Uri Johnson, Calvin Duning, Luther L. Benham.

SELECTMEN OF HAMDEN.

1786 to 1886.

1786.—John Hubbard, Asa Goodyear, Samuel Dickerman, Moses Gilbert, Simeon Bristol Esqr.

1787.—John Hubbard, Samuel Dickerman, Moses Gilbert, Theophilus Goodyear, Abraham Alling.

1788.—Theophilus Goodyear, Medad Atwater, Abraham Alling, Isaac Dickerman, Alvan Bradley.

1789.—Medad Atwater, Abraham Alling, Capt. Samuel Atwater, Alvan Bradley, Jabez Bradley.

1790.—Isaac Dickerman, Samuel Hummiston, John Hubbard Esqr., Hezekiah Warner, Stephen Goodyear.

1791.—Isaac Dickerman, Stephen Ford, Caleb Alling, Hezekiah Warner, Bajzet Munson Esqr.

1792.—Stephen Ford, Bajzet Munson Esqr., Caleb Alling, Hezekiah Warner, Elisha Chapman. Jan. 7, 1793, Joel Ford was elected in place of Stephen Ford, "refused."

1793.—Theophilus Goodyear, Stephen Ford, Simeon Bristol, Caleb Alling, Samuel Bellamy.

1794.—Simeon Bristol, James Basset Junr., Sam'll Bellamy, Joel Ford, Ezra Ives.

1795.—Ezra Ives, Joshua Atwater, James Basset Junr., John Hubbard Esqr., George A. Bristol.

1796.—John Hubbard Esqr., James Basset Junr., Amasa Bradley, Hezh. Dickerman, Thomas Potter.

1797.—Hezh. Dickerman, Thomas Potter, Amasa Bradley, Caleb Alling, Bajzet Munson Esqr.

1798.—Caleb Alling, Bajzet Munson, Isaac Dickerman, Philemon Potter, Josiah Root.

1799.—Isaac Dickerman, Philemon Potter, James Basset Junr., Simeon Bristol, Sam'll Bellamy.

1800.—Philemon Potter, Samuel Bellamy Esqr. Alvan Bradley, James Basset Junr., John Hubbard Esqr.

1801.—Philemon Potter, Samuel Bellamy Esqr., Alvin Bradley, James Basset Junr., John Hubbard Esqr.

1802.—Amasa Bradley, Medad Atwater, Alvan Bradley, Timothy Bassett, Joseph Dorman.

1803.—Alvan Bradley, Medad Atwater, Joseph Dorman, Amasa Bradley, Timothy Bassett.

1804.—Mr. Alvan Bradley, Medad Atwater, Amasa Bradley, Timothy Bassett, Joseph Dorman.

1805.—Amasa Bradley, Medad Atwater, Timothy Bassett, Joseph Dorman, Chauncey Dickerman.

1806.—Chauncey Dickerman, Russel Pierpont, Philemon Potter, Levi Gorham, Samuel Atwater, Captain Stephen Ford, Jesse Tuttle.

1807.—Russel Pierpont, Amos Bassett, Jesse Tuttle, Levi Gorham, Jesse Dickerman.

1808.—Russel Pierpont, Levi Gorham, Jesse Tuttle, Jesse Dickerman, Joseph Gilbert Junr., Timothy Bassett.

1809.—Levi Gorham, Joseph Gilbert Junr., Ezra Kimberly, Jesse Dickerman, Jesse Tuttle.

1810.—Hezekiah Warner, Enos Dickerman, Jared Atwater, Amasa Bradley, Elam Bradley. (Ezra Kimberly, Jesse Tuttle and Joseph Gilbert Junr., were excused.)

1811.—Hezekiah Warner, Enos Dickerman, Jared Atwater, Amasa Bradley, Elam Bradley.

1812.—Jared Atwater, Elam Bradley, Roger Dorman, Daniel Chatterton, Amos Dickerman.

1813.—Daniel Chatterton, Roger Dorman, Amos Dickerman, Lyman Atwater, Joel Ford Jr.

1814.—Roger Dorman, Amos Dickerman, Daniel Chatterton, Lyman Atwater, Joel Ford.

1815.—Joel Ford, Lyman Atwater, Jared Basset, Elias Hotchkiss, Ambrose Tuttle.

1816.—Justus Homiston, Hezekiah Warner, Enos Dickerman, Lyman Ford, Zadoc Allen.

1817.—Zadoc Allen, Lyman Ford, Joseph Dorman, Leveritt Tuttle, Jesse Mansfield.

1818.—Lyman Ford, Jesse Mansfield, Joseph Dorman, Leveritt Tuttle, Zadoc Allen.

1819.—Lyman Atwater, Hezekiah, Warner Esqr., Allan Dickerman, Ambrose Tuttle, Samuel Chatterton.

1820.—Allen Dickerman, Joseph Gilbert Esqr., Elam Warner, Enos Dickerman.

1821.—Elam Warner, Allen Potter, Jason Dickerman.

1822.—Elam Warner, Jason Dickerman, Allen Potter.

1823.—Arba Dickerman, Arba Bassett, Joel Ford Esqr.

1824.—Joel Ford, Arba Dickerman, Alfred Bassett.

1825.—Joel Ford, Alfred Bassett, Arba Dickerman.

1826.—Alfred Bassett, Arba Dickerman, Joel Ford Esqr.

1827.—Elias Cooper, Elam Warner, Leverett Dickerman.

1828.—Allen Dickerman, Jesse Gilbert Junr., Eli Dickerman.

1829.—Jesse Gilbert Junr., Roderick Kimberly, Leveritt Tuttle.

1830.—Roderick Kimberly, Jesse Gilbert Junr., Capt. Leveritt Tuttle.

1831.—Leveritt Tuttle, David Bassett, Jesse Mansfield.

1832.—Jesse M. Mansfield, David Bassett, Sterling Bradley.

1833.—David Bassett, Jesse M. Mansfield, Sterling Bradley.

1834.—Sterling Bradley, James M. Ford, Lewis Heaton.

1835.—Lewis Heaton, James M. Ford, Loyal H. Todd.

1836.—Harvey Bradley, Horace Potter, Amos Peck Junr.

1837.—Amos Peck Jr., Albert G. Davis, Alfred Bassett.

1838.—Alfred Bassett, Jonathan Dickerman, David Sanderson.

1839.—Lewis Warner, Leveritt Tuttle, Jesse M. Mansfield.

1840.—James M. Ford, Ezra Alling 2d, Peter L. Van Hauten.

1841.—Peter L. Van Hauten, Lewis Warner, Jesse Tuttle Jr.

1842.—Lewis Warner, Jesse Tuttle Jr., Griswold I. Gilbert.

1843.—Griswold I. Gilbert, William B. Dickerman, Horace Potter.

1844.—Horace Potter, John G. Smith, Abial Leonard.

1845.—Abial Leonard, Harvey Bradley, Elihu Dickerman.

1846.—Harvey Bradley, Elihu Dickerman, Henry Munson.

1847.—Henry Munson, Henry Tuttle, Elihu Dickerman.

1848.—Jesse M. Mansfield, Lucius Ives, Joel N. Churchill.

1849.—Rufus Dorman, Henry Tuttle, Albert Goodyear.

1850.—Rufus Dorman, Henry Tuttle, Albert Goodyear.

1851.—Griswold I. Gilbert, Eli Dickerman, Arba Dickerman.

1852.—Griswold I. Gilbert, Ezra Alling, Leveritt A. Dickerman.

1853.—Griswold I. Gilbert, Ezra Alling, Leveritt A. Dickerman.

1854.—Griswold I. Gilbert, John G. Smith.

1855.—Griswold I. Gilbert, John G. Smith, Amos R. Hough.

1856.—James M. Ford, Harvey Bradley, Russel S. Jacobs.

1857.—Griswold I. Gilbert, Russel H. Cooper, Eli B. Smith.

1858.—Merit Ford, Jared Dickerman, Henry Tuttle.

1859.—Charles Brockett, Jabez T. Potter, Albert Good-year.

1860.—Charles Brockett, James J. Webb, John H. Dickerman.

1861.—Charles Brockett, James J. Webb, John H. Dickerman.

1862.—Henry Munson,* Russel H. Cooper,* Philos Dickerman.

1863.—Lewis Warner, Philo Bradley, Birdsey A. Bradley.

1864.—Merrit Ford, Jesse Cooper, Philos Dickerman.

1865.—Norris B. Mix, Edwin W. Potter, Birdsey A. Bradley.

1866.—Norris B. Mix, Edwin W. Potter.

1867.—Henry Tuttle, Samuel F. Potter, Bela Mann.

1868.—Merrit Ford, Charles P. Augur, Edwin B. Payne.

1869.—Henry Tuttle, Edwin W. Potter, Philos Dickerman.

1870.—Henry Tuttle, Edwin W. Potter, Philos Dickerman.

1871.—Henry Tuttle, Edwin W. Potter, Philos Dickerman.

1872.—Andrew J. Doolittle, Philos Dickerman, Henry Tuttle.

1873.—Andrew J. Doolittle, Harry Prescott, Cecil A. Burleigh.

1874.—Andrew J. Doolittle, Harry Prescott, Philos Dickerman.

1875.—Andrew J. Doolittle, Edwin W. Potter, Philos Dickerman.

1876.—Norris B. Mix, Edwin W. Potter, Andrew McKeon.

* "At Mr. Munson's request he was excused and Charles Brockett Esq., chosen in his place. Mr. Cooper was also excused at his request, and Merit Ford Esq., was chosen in his place."

1877.—Norris B. Mix, Edwin W. Potter, Cecil A. Burleigh.

1878.—Norris B. Mix, Edwin W. Potter, Cecil A. Burleigh.

1879.—Norris B. Mix, Edwin W. Potter, Charles P. Angur.

1880.—C. P. Angur, W. W. Woodruff, Edwin W. Potter.

1881.—Charles P. Angur, Walter W. Woodruff, Edwin W. Potter.

1882.—Edwin W. Potter, Bela A. Mann, Leveritt A. Dickerman.

1883.—Leveritt A. Dickerman, Edward Davis, Edwin W. Potter.

1884.—Leveritt A. Dickerman, Cecil A. Burleigh, Henry W. Munson.

1885.—Charles P. Angur, Walter W. Woodruff, Thomas Cannon.

1886.—John E. Andrews, William I. Munson, Thomas Cannon.

1887.—John E. Andrews, William I. Munson, Thomas Cannon.

LIST OF MEMBERS OF THE CONNECTICUT HOUSE OF REPRESENTATIVES FROM THE TOWN OF HAMDEN.

COMPILED FOR THE HISTORY BY THE HON. HUBERT E.
WARNER.

1786 TO 1886.

Mr. Simeon Bristol, October Session, 1786 to October Session, 1787.

Mr. John Hubbard, October Session 1787 to May Session, 1788.

Mr. Simeon Bristol, May Session, 1788 to October Session, 1781.

Mr. John Hubbard, October Session, 1791 to May Session, 1792.

Mr. Simeon Bristol, May Session, 1792 to May Session, 1795.

Mr. Samuel Bellamy, May Session, 1795 to May Session, 1796.

Mr. Simeon Bristol, May Session, 1796 to October Session, 1797.

Mr. Samuel Bellamy, October Session, 1797 to October Session, 1798.

Mr. Josiah Root, October Session, 1798 to May Session, 1799.

Mr. John Hubbard, May Session, 1799 to October Session, 1799.

Mr. Simeon Bristol, October Session, 1799 to May Session, 1800.

Mr. James Bassett, Jr., May Session, 1800 to May Session, 1802.

Mr. Amasa Bradley, May Session, 1802 to October Session, 1802.

Mr. James Bassett, October Session, 1802 to October Session, 1803.

Mr. Medad Atwater, October Session, 1803 to October Session, 1804.

Mr. Amasa Bradley, October Session, 1804 to May Session, 1809.

Jesse Tuttle, May Session, 1809 to May Session, 1810.

Russell Pierpont, May Session, 1810 to May Session, 1811.

Amos Bradley, May Session, 1811 to October Session, 1811.

Amasa Bradley, October Session, 1811 to May Session, 1812.

Elam Bradley, May Session, 1812 to May Session, 1813.

Amasa Bradley, May Session, 1813 to October Session, 1814.

Joel Ford, October Session, 1814 to May Session, 1816.

Amasa Bradley, May Session, 1816 to October Session, 1818.

Russell Pierpont, October Session, 1818 to May Session, 1819.

Roger Dorman, May Session, 1819 to ———	Session, 1820.
Joel Ford,	1820 and 1821
Hezekiah I. Warner,	1822
Jared Bassett,	1823 and 1824
Ambrose Tuttle,	1825 and 1826
Jared Bassett,	1827 and 1828
Alfred Bassett,	1829 and 1830
Jared Bassett,	1831 and 1832
Elam Warner,	1833 and 1834
Alfred Bassett,	1835
Jared Bassett,	1836
James M[arcus] Ford,	1837 and 1838
Leverett Hitchcock,	1839
Leverett Tuttle,	1840
Horace Potter,	1841
Allen Dickerman,	1842
Loyal F. Todd,	1843
Abial Leonard,	1844
Ezra Alling 2d,	1845
Horace Potter,	1846
Henry Munson,	1847
Leverett Tuttle,	1848
Lewis Warner,	1849
Abiel Leonard,	1850
Horace Potter,	1851
Eli B. Smith,	1852
Russell H. Cooper,	1853
Henry Munson,	1854
Loyal F. Todd,	1855
Horace Potter,	1856
Merrit Ford,	1857
Henry Tuttle,	1858
James M. Ford,	1859 and 1860

Merrit Ford,	1861
Eli B. Smith,	1862
Elias Warner,	1863 and 1864
Andrew J. Doolittle,	1865
Henry Tuttle,	1866
Augus. Dickerman,	1867 and 1869
Gilbert L. Benham,	1869 and 1870
Silas Benham,	1871
Philos Dickerman,	1872
Jesse Cooper,	1873
Edwin W. Potter,	1874
Riley R. Palmiter,	1875 and 1876
Andrew J. Doolittle,	1877
Norris B. Mix,	1878 and 1879
Cecil A. Burleigh,	1880
Leveritt A. Dickerman,	1881
Bela A. Mann,	1882 and 1883
Frederick E. Tuttle,	1884
Henry W. Munson,	1885
Hubert E. Warner,	1886

INHABITANTS OF HAMDEN WHO HAVE BEEN MEMBERS OF
THE CONNECTICUT SENATE.

Jared Bassett,	1833
Eleazer Warner,	1840
Griswold I. Gilbert,	1843
Marcus Merriman Jr.,	1846 and 1847
Griswold I. Gilbert,	1852
James J. Webb,	1863
Henry Tuttle,	1871

INDEX.

A.

Aaron, Doctor, inoculation for small-pox,	212
Act of Incorporation of Hamden,	18
Agriculture, by J. H. Dickerman,	88
Adjustable Carriage Poles,	157
Alms House, for town poor, proposed,	217
Altitude of points on West Rock Range,	58
Ancient Order of Hibernians in procession, 5, 7; organization of,	226
Allen, Miss Mary, m. A. Tuttle,	278
Alling Abraham, Pastor of Church on Hamden Plain, 183, 184, 185, 200, 228—A. W., of Sheffield Laboratory, silver in Mt. Carmel native copper, 70—Caleb, 181—Charles, 200—Col. Edward, 200—Edward, Esquire, 200—Eunice, 234—Ezra, 2d, 196—Jesse, 196—Merritt, 196—family history,	227
Andrews' Farm, by Wallingford highway, 92—John E. & Son, Saw Mill and Flour Mill, 169—Sybil, 195—Timothy, 196—William, petition of,	110
American Flag,	8
American Rifles, at the Exhibition of 1851,	139
Amity Parish bounds,	53
Anniversary of the adoption of the national flag,	35
Appropriation for celebration,	2
Arm chair, of Jonathan Ives,	257
Arnold, John, Col., Instructor in military tactics,	173
Area of the Town of Hamden,	56
Arrowheads of stone or flint,	50
Arbor Day,	75
Arctic regions and the United States flag,	33
Arctic firmament, beauty of, Kane,	33
Atlas, of New Haven County,	56
Atwater, name of,	16
Atwater, fund for insane poor, 220—George, 220—Jared, tobacco culture, 87—Capt. Samuel, 212—Samuel, "clark" of Mt. Carmel Parish,	176
Augur, Charles P.,	6, 90, 192
Augers, etc., manufacture of,	149
Augerville, population of,	232
Axle and Brass works,	152
Axle Works, Mt. Carmel,	144

B.

Bache, R. M., Topographical map of the New Haven region,	56
Bacon, Miss Rebecca, Superintendent New Lebanon Mission,	199
Baldwin, Professor Simeon E.,	8, 9, 36
Ballard, John, of Medfield,	242
Barbadoes, old copper from, for bells,	151
Barber, enumeration of mills and manufactures,	112
Barnes, A. F.,	152
Barton, William, on American Flag, 26—William, maker of sleigh-bells,	160
Bassett, name of, 16—Aunts Sally and Nabby, 234—Deacon Eaton, 190— Deacon Elias, 187, 190—Hezekiah, 233—James, 233, 234—James and David, 235—Brothers James and Timothy, wounded in flight at Ditch Corner, 234—Hon. Jared, 233, 235—John, built the Old Bassett House, 233—Lyman H., Sec'y Bolt Co., 157—Mrs. Mercy, 194—Robert, the drummer, 229, 232—Samuel, 175, 233—Timothy, 234—William, an- cestor of Hamden families, 233—family history,	238
Baxter, Thomas, arrested, 230—Author of Saints' Rest, hoped to enjoy the Society of Hampden,	17
Bayonets, manufacture of,	110
Beacon Hill, earthworks at,	202
Beaver Ponds,	67
Beaver Ponds, mills at,	111
Beech Spring entrance to Park,	108
Beers, Ellis and Soule, Atlas of New Haven Co., 50—Ira, gypsum mill, 169—Philos, grist mill,	168
Bell Metal, for sleigh bells,	161
Bell, Rebecca, m. Jonathan Tuttle,	277
Bells, manufacture of small, 160—Church, 151—Chimes,	161
Bellamy, Aaron, 74—Samuel, house of,	224
Benedict, Truman,	152
Benham, Amos, 195, 196, 237—Isaac, 195, 196, 236—Jared, Supt. Methodist Society Sunday School, 197, 237—John, 236—Joseph, 236—Luther, 237 —Ruth, 195, 196—William, 89—family history,	230
Bible Classes, Whitneyville Church,	192
Birch Trees,	78
Bird, Rev. Samuel, 232—George, soldier in late war,	205
Bishop, F. F., Sec'y and Supt. N. H. Ice Co.,	164
Bishop Carriage Pole,	157
Blacksmith Shop, the Sperry, on Cheshire Road,	169
Blake, Elihu, 237, 277—Eli Whitney, 69, 189, 238, 239—Philos, 189, 237— William and Agnes, 16, 30, 237—William Phipps, 7, 8, 13—family of in Hamden,	237
Blakeslee, Esther,	278
Blue Flag with crescent, South Carolina,	25
Blue, a favorite color with the Colonists, the color of the uniform of South Carolina Troops,	27
Blue Hills of Mount Carmel,	58, 61, 71
Blunt's prolific (corn),	84
Boarding School for boys, Centerville,	172, 174
Bolt Company, Mt. Carmel,	157
Bones, ground for fertilizers,	168
Bounds of the Parish of Mt. Carmel,	51, 52
Boundary lines of town perambulated by Selectmen,	54
Borer in peach trees, preventive of,	89
Boring tools, augers, gimlets, etc.,	144
Boulders in the glacial drift, 64, 65—boulder formation,	65

Bradley, name of, 16—Mr. Amasa, Lay-reader at Grace Church, 192—Capt. Amasa, 241—Chloe, 244—Mrs. Cynthia, 194—Daniel, memorial of, 175—Moderator, 176—Daniel, Israel Sperry and Joel Munson, 51—George, 151—G. W., Prize Corn at Paris, 1878, 84—Ezra, Grace Church, 192—Mr. Levi, 194—Nehemiah, 151—Capt. Phineas, manufacturer of buttons, 111—R. B. & Co., agricultural implements, 6—Mr. Stirling, 194—Wallace H., Secretary Whitney Arms Co., 148—William, milk farm, 89—family history,	240
Braid, webbing, etc.,	147
Brass, Works, Mt. Carmel, 148, 162—mountings for carriages and harness, 149—made from old W. I. copper, 151—castings for carriage goods, 150—hub bands,	150
Breech loading and magazine rifles,	143
Brewster, Rev. Joseph, 194—James,	98
Brick clay, 68—Of North Haven and Hamden, 163—Brick industry of the Quinnipiac Valley, 1836, 163—bricks and brick manufacture in Hamden and vicinity, 163—Brick yards, amount of wood consumed by,	77
Bridges and Highways,	15, 210
Bristol, name of, 16—Simcon, and Bristol Family, 15, 16, 241—Family record of,	242
British invasion of New Haven,	234, 248
Brockett, Hon. Chas.,	261
Broomhead, Benjamin, land for parsonage,	196
Brownell, Rt. Rev. Bishop,	198
Brown, Frederick,	197, 198
Bronze or brass pan for musket,	188
Brooks, W. Enos, wills his farm to the town, 219—Mrs. Roxana,	219
Buckingham, Gideon,	15
Building stone,	69
Bush, Henry, casting bells,	161
Butter, cream and milk,	89
Buttons, manufacture of,	111

C.

Cadets, New Haven,	264
Calico printing in 1780,	110
Canaan, Conn., iron from, for Whitneyville,	292
Canal Company, 95—Canal, New Haven & Northampton,	144
Candee rubber factory,	144, 146
Candee, Lucy Ann, of Oxford, Ct.,	258
Catholic communicants and residents,	199
Cattle, value of, in 1818, 83—Cattle, horses and sheep, brands for,	207
Cartridge boxes, proposed manufacture of,	121
Carriage axles, manufacture of, 145—Carriage axle business, 259—Carriage axles imported, 259—Manufacture of, by machinery, 259—Carriage hardware, 148—Carriage pole works at Mt. Carmel, 157—Carriage springs, 154, 264—Carriage springs, Mix's, excellence of, 156—Carriage and coach springs made in Hamden, Mt. Carmel,	112
Centennial Committee appointed,	1
Centennial hymn,	8, 20
Centerville Brass Band,	5, 7
Centerville, charter for water works, 104—population,	222
Centers of population,	221, 222
Channel, ancient river,	60, 67
Chandler, Joshua, a son of,	284
Charcoal for iron works at Saltonstall lake,	110

Charleville, French, pattern of Muskets,	296
Charles, Last Sachem of the Mohicans of the Region of New Haven,	49
Chatterton, Daniel and family,	242
Cherry and mulberry trees,	90
Cherry Hill Ridge, 67—Cherry Hill, 264—old house at,	277
Cheshire Road, 91, 94—Cheshire Mine, Shipments from, 74—Cheshire Turnpike Company,	94, 95, 278
Chestnut wood, 78—Chestnut wood for burning brick,	168
Chief Marshal, Centennial Celebration,	5
Chime bells,	161
Choristers of Whitneyville Church,	192
Church bells,	151
Church of Christ, Whitneyville,	178, 192
Church, William, peach trees,	88
City Bank of New Haven,	96
Clams, oysters, fish,	15
Clark, H. D., Patent for covering thread with silk, 159—R. S., silk manufacture, 159—R. S., on manufacture of small bells, 160—Rev. Peter G.,	198
Clarke Captain Thomas, Master of Iron Works,	110
Clay and sand deposits,	68
Clay pits for brick clay,	162
Cleveland Dr., on Gov. Gilbert lot, 247—Elias of New York, leases of mineral land,	72
Cloth Mills,	84
Coal for burning brick, 168—Coal for the Brass Company, 152—Coal and wood supplied at Mt. Carmel,	169
Coe, Ward, New Haven Web Co.,	146, 148
Coinage of copper cents at the New Haven Mint,	70
Cott Rev. Gurdon S.,	193
Colburn Geo. D., brass castings,	150
Commemorative Exercises,	5
Committee to draft a plan of celebration,	1
Conference Statistical Report, Methodist Society,	197
Conglomerates, sandstones and shales,	63, 64
Connecticut Valley,	9, 18, 57
Connecticut Volunteers in War of Rebellion, 202, 205—Connecticut Standard Colors, 1775,	24
Constables of Hamden in 1786,	208
Constitution for State of Connecticut,	215
Contact of trap and sandstone,	64
Contributions for religious and benevolent objects,	191
Constitutional convention, vote for delegate,	211
Continental Troops at Prospect Hill, 24—Continental Congress, declaration of,	24
Contract for making rifles, 140—Contract of Mr. Whitney to make muskets for the United States,	124, 125, 126
Cooper, name of, 16—Ellsworth B., Secretary of Executive Committee, 2—On Taxation and Land Records, 813—D. H., factory at Ives', 145—Russell H., 194—Thankful, 256—Place,	257
Copper Native, 69, 70, 72—from West Indies, 151—coins struck in New Haven,	110
Cornwallis, Lord, surrender of at Yorktown,	29
Corn, cultivation of by the horse-hoe, 165—corn planting and harvesting, 84—corn and corn meal,	83
Cornwall, Rev. Asa,	198
Cotton Mill at Westville in 1789, 110—Cotton Gin, the invention of by	

Whitney, 112—cotton gin, model of, 5, 18—cotton cleaning by slaves in Georgia, 285—cotton production of United States,	119, 120
Coulter harrow, Shares,	86, 166
Covered truss bridge built by Ithiel Town,	103
Crafts, Captain S. P., brick making,	162, 163
Crane, Dr., house of, near the site of Hezekiah Sabin's house,	51
Cream separated by the centrifugal process,	89
Cromwell, prevented from sailing for America,	16
Crowley, Rev. Father John, 199—Orrin, tobacco culture,	87
Cultivators for crops, 86—cultivation of forest trees,	79

D.

Daddy Barton, maker of sleigh bells,	160
Dairy products,	89
Dam at Whitneyville,	100
Dana, Rev. James, 177—Prof. James D., height of terrace plain, 59— Prof. James D., floods from melting glaciers,	87
Davis, Col. Jefferson, on Whitney Rifles,	141
Davis's Hill, home of Ebenezer Alling,	228, 279
Dayspring Lodge, F. and A. M.,	169, 224
Deacons of Mt. Carmel Church Society,	177
Debts of New Haven, Hamden's share,	14
Decarbonized steel,	140
Delegates to Ecclesiastical Council,	179
Delevan, Rev. George E.,	187
Derby dam, vibration by overflow,	102
Dickerman, Deacon Eli, 190—Miss E. E., of Loan Exhibition Committee, 46—J. H., of Mt. Carmel, 70—Forest Trees, 75—Tobacco Culture, 87—Samuel, 16, 176—Thomas, of Mr. Mather's Company from Eng- land, 242—William, tobacco crop, 87—Rev. George A., 178—Miss Julia, 257—Miss Mary Alling, 278—family,	242-245
Dignified Seats at Mt. Carmel meeting-house,	176
Ditch Corner, engagement at the,	234
Division of labor in gun-making,	187
Dixwell Avenue,	91
Dix, General, famous order respecting American flag,	32
Dogs, keeping of legalized, under tax,	85
Donations and bequests for church purposes,	194
Doolittle, A. J.,	169
Dorman, Ezekiel, Edmund and Lyman, 201—Rufus, 196—Rebecca,	195
Durham circuit,	195
Dutch, Expeditions against,	229
Drakes of Ashe, England,	245
Drea, Rev. Father Thomas,	198
Drift deposits of glacial origin,	64, 65
Drummers not employed by manufacturers at Mt. Carmel,	153
Dry Kiln for meal at Mt. Carmel, 1818,	84
Dwight, Dr., Statistical Account quoted, 69—Letter from in 1801,	289

E.

East Farms highway,	211
East Hampton, manufacture of sleigh bells at,	161
East Haven,	18

East Rock Range, altitude of, 58—East Rock Park,	105
East River,	14
East Plain Society of Hamden,	178
Eaton, family history,	256
Ecclesiastical History, 175—Ecclesiastical Council, 1795,	179
Education, District Schools, 170-172—advantages of Hamden,	9, 18, 24
Edwards, Ex-Governor, Trustee of Whitney estate,	189
Edwards, Mrs. Jonathan, drowned in Sabine's mill pond,	112
Elam Ives,	257
Elevations along Mill River, 59—of East Rock, West Rock and Mt. Carmel,	58
Eliot, Doctor Joseph, small-pox hospital,	212
Elliptic and thoroughbred carriage springs,	154
Ellsworth at Alexandria,	32
Embroidery silk,	159
Erratic blocks,	67
Everest, Rev. Chas. W.,	172, 174, 193
Everest, Rev. H. L., Rector Grace Church,	192, 194
Estrays, appraisal and sale of,	212
Exhibition of objects in the Loan Exhibition,	46
Executive Committee,	2
Extent and boundaries of the Town of Hamden,	51

F.

Fair Haven Church,	178
Family History Notices,	227
Farmington Canal Company, 95, 216—Farmington Road,	91, 92
Farnam Drive, and views from,	60
Farnam, Henry, engineer of Farmington Canal,	95, 96
Fay, Miss Elizabeth,	281
Fence Viewers, 1786,	208
Fertilizers,	85, 86
Fire Arms for the United States in 1798,	120
Fires in woodlands, injury done by,	81
First Church of New Haven, New Lebanon Mission of,	190
Fish, Oysters, Clams, reservation of the privilege of taking, 15—Fish oil, menhaden,	86
Fitch, Rev. Henry, Grace Church,	198
Flag of Our Union, an Address by Hon. N. D. Sperry, 23—Flag Un- furled by General Putnam, 24, 25, 36—flag for the American Navy,	26
Flint Lock Muskets,	189
Flour mill and saw mill,	169
Ford, name of, 16—Joel, Moderator of Town Meeting, 217—Deacon Ly- man, 185, 189, 190—Moses, received into the Church, 181, 189— Stephen, Captain, 200—family history,	245, 246
Forbes & Adam, of Canaan, contract to supply iron,	292
Forest Trees, notice of by J. H. Dickerman, 75—list of in Hamden,	81
Forest Fires, destruction of trees by,	81
Fox, Rev. Father Patrick,	199
Free Speech, Robert Bassett an advocate of,	229
Freemen of Town of Hamden, list of,	318
Freighting to Boston by teams, 44, 92—Freighting, exclusive grant of,	93
Fruit,	87
Frost, Joseph, pastor Methodist Society,	197
Fulton Robert, letters from,	302, 305

G.

Garden Implements,	158
Garfield, Rev. John W.,	198
Gaston, Mr. N. H.,	151
Gate of the Two Towns, entrance to Park,	107, 108
"Geese or geese kind," Ordinance respecting,	214
Genealogical and biographical notices,	227
General Assembly of Connecticut,	15
Geology, sketch of the,	68
Georgia, State of, Infringement of cotton gin patent by the people of,	115
"Giant's Kettle" near Day's store,	68
Gilbert, name of, 16—Daniel, 248—Miss Eunice, 278—Griswold I., dairy, 89—Mr. Gibbs, 181—Capt. John, of Hamden, 28—Capt. John, killed by the British, 248—inscription on monument to, 249—Moses and Joseph, Corporals 14th Company, 200—Deputy Governor Mathew, 247—Moses, 16—Sir Humphrey, 246—Capt. Raleigh, of Plymouth Company, 246—family history,	246-249
Gillis, John, Lieutenant Seventeenth Company,	200
Gimlets and other boring tools,	144
Glaciation of the New Haven Region, 57, 65—of Mt. Carmel Range, 66—of Mill Rock, 66—Glacial Scratches, 66—Glacial Drift Deposits, 64—Glacial Era, Ice Sheet,	57
Goffe, William, the regicide, supposed grave of,	248
Goodyear, name of, 16—Andrew, 176—Asa, 16—Charles, vulcanization of Rubber, 252—Stephen, iron works in 1655, 109—Watson A., 251—William B., 251—lot at Centerville, 36—family history,	249-255
Gorham, Julius, peaches on farm of,	88
Gormley, Mr., owner of old John Bassett farm,	235
Governor Harrison,	7, 8, 21
Granby Mines,	78
Grace Church (Protestant Episcopal) at Centerville,	172, 192, 194
Grafton, Mass., school taught there by Eli Whitney,	283
Grand Jurors of Hamden 1786, 208—grand list of Hamden, amount of,	315
Granniss, J. A., 153—Granniss & Russell, carriage poles,	157
Grant of Land to Connecticut Colony,	50
Grapes,	87
Gregory, Eliphalet, house of	225
Greene, Widow of General,	285
Green Seed cotton,	287, 288
Grist mill and saw mill,	109
Ground moraine,	65, 66
Grinnell Flag of the Antarctic,	83
Gun Barrels,	140
Gypsum Mill,	168

H.

Hall Andrew, 151—Benjamin, 175—Wm. D., Oil from menhaden fish,	86
"Hamburg," so called, 221—population of,	222
Hamden, Hamdben or Hampden, orthography of, 17—Hamden incorporated in 1786, 13—Hamden, name of naval vessel, 16—Hamden, the birthplace of many important manufactures, 19—Hamden Ridge entrance to Park, 107—Hamden Plain, 59, 67—Hamden Plain Church building, 1795,	182
Hamden East Plain Society,	178, 192

Hampden John,	16
Hampden, Baxter's admiration of,	17
Hampshire and Hampden Canal Company,	69
Hamilton, Gen. Schuyler's History of the National Flag,	25
Hancock John, secures the flag from the Brig Nancy under fire,	28
Hanging Hills of Meriden, blocks from,	67
Hardware, manufacture of, in Hamden,	145
Hardware, for carriages,	148
Harness hardware,	145
Harness trimmings,	149
Harpers' Ferry rifle,	140
Hartford and New Haven Turnpike,	92, 98
Hartford Turnpike and Cheshire Turnpike,	215
Hartford and Springfield Consolidated Road,	98
Hart, Rev. Father Matthew, 198—Deacon, property for Rectory School,	173
Harrow, coulter for cultivating crops,	107
Harrison, Nathaniel,	175
Haugh, John S.,	197
Hay,	84, 87
Hayes, Samuel J., Treasurer Bolt Co.,	117
Haywards, their duty,	217
Heaton, (Eaton) Family,	256
Henry, John T., 194—John T., pruning shears,	158
Hendrick, Miss Maria, of New Haven,	264
Height of East and West Rock,	58
Hibernians, Ancient Order of,	220
Hickory Wood,	78, 80
Higgins, Rev. L. H., Mt. Carmel Church and Society,	175
Highway, prepared by Deacon Stephen Goodyear,	214
Highways, division of into districts,	210
Hillhouse, James, Superintendent Farmington Canal,	95
History of Hamden, authorized by the Town,	17
Hitchcock, name of,	16
Hoing crops, by Shares' patent horse hoe,	164
Holstein cows, for milk,	89
Home Rule, 37, 40—Government by the people in Connecticut towns, 21, 22—Home Missionary Society,	191
Horses and Cattle,	83, 85
Horse Hoing and Planting Machines,	164
Hotchkiss, Mr. Henry L., President L. Candee Co., 144, 147, 148—Mr. Frank E., copies of inscriptions, 254—Justus S., Superintendent New Lebanon Mission,	199
Hubbard John, 14, 16—Professor O. P. on Chas. Goodyear,	252
Hub Bands,	150
Hunt's Mills, formerly on Mill River,	259
Hurd, Davis, Chief Engineer Farmington Canal,	95

I

Ice, Wagons in procession, 6, 7—Company of New Haven, 164—crop of Hamden,	164
Impounding horses and cattle, 216,	216
Insane poor, provided for by Atwater fund,	270
Incorporation of Town of Hamden,	18
Indian Head, East Rock Park,	108
Indian wars,	200

Indemnity bond to the United States, Whitney's,	297
Ingham, Abigail,	278
Interchangeable or uniformity system, 18, 129, 130, 136,	139
Interchangeability of parts of muskets,	296
Invasion of New Haven, by the British,	23
Invited guests of celebration,	8
Iron Works of Saltonstall Lake, 109—Iron Ore, from North Haven, in 1655, 109—Iron lap welded gun barrels, 140—Iron carriage axles, 145 —Iron from Canaan, Conn., for muskets,	292
Ives, name of, 16—Family History, 250, 261—Elam, 144, 148—Elam, Fam- ily of, 257—establishes a freight line, 10, 258—Elam (2), pioneer in manufacture of carriage hardware at Mt. Carmel, 258—E., Jr., suc- cess as musician, 261—Elliot E., director of orchestra, 6—Frederick, 200—Harry, carriage axles, 261—James, farin, 52, 53—James, 105, 144, 151, 152, 158, 157, 158—James, contributions to the History, 258 —Lucius, 83, 92, 152—Parsons, 198—Rev. Reuben, 198—Henry and Mount Carmel Axle Works, 259—William J., use of lot for the cele- bration, 5—Mr., of Mt. Carmel, remarks by, 44—W. A. & Co., boring Tools, 6,	144
Ives & Grannis,	153
Ives & Miller,	260
Ives, Woodruff & Co.,	153
Ives, Pardee, Mfg. Co.,	153
Ives Carriage Pole,	159
Ives's Station, elevation above tide,	53
Ivesville, population of,	22

J.

Jersey Prison Ship, imprisonment of Capt. Mix in,	204
Jefferson, Thomas, Secretary of State, letter to Eli Whitney, 118—Thomas, signature to carriage spring Patent, 154, 155—Davis, Col. of Missis- sippi Regiment, 140, 141	
Johnson, Judge, of U. S. Court in Georgia, decision in cotton gin suit, 116, 119—Charles L., Secretary L. Candee Co.,	144
Joel Ford, Esq., Agent of Town,	216
Judd, Orange, sweepstake premium for pumpkins,	86
Judge's Cave, bowlders,	67

K.

Kane, Doctor, in the arctic seas, under the American flag,	88
Kegs for hardware,	157
Key's Star Spangled Banner,	80, 81
Kimberly's Mills,	260
King, Winifred, m. Joseph Benham, 236—Wm., Supt. at Cheshire Mine, 74	

L.

Land records of Hamden, short account of, Cooper,	315
Labor, division of, in making arms, 137—labor league,	149
Laidley Gun,	143
Leather Sealers of the town, 1786, 208—Leather stamping,	212
Leavenworth, Joseph N.,	146
Legislature, representatives in from Hamden,	328
Legends of the Blue Hills,	61

Leek, Family History, 262—Russell, built smith shop,	169
Leicester Academy,	238
Leonard, Mr., Chaplain to General Putnam,	24
Lexington, battle of,	25
Length and breadth of Hamden,	56
Lexington, Mass., march to by Jonathan Mix,	264
Lightning, protection from, by trees,	78
Listers of Hamden, 1786,	208
Live Stock in early times, marks or brands for,	207
Loan Exhibition,	6, 42, 44, 48
Locusts, the injury to trees by,	80
Long Island visible over East Rock from Mt. Carmel,	58
Looms for weaving webbing,	146, 147
Long Lane, part of Cheshire Road,	91
Looms, Warpers. Spoolers, etc.,	147
Lovejoy, T. A.,	197
Luncheon, day of Celebration,	6

M.

Machinery in Armory, 142—machine work for small arms, 294—in making firearms, 133, 134—machines and machine tools,	121
Macaulay on Hampden, 17—Macaulay on Eli Whitney,	306
MacMullen, David, pastor Methodist Society,	197
MacMullen, David, address by,	39
Magazine Rifle, new form by Whitney,	143
Maher, Patrick, President Ancient Order of Hibernians,	226
Mainsprings for carriages,	154
Mains, Rev. George P.,	197, 198
Malleable iron castings, Malleable Iron Works,	152
Mallon, Rev. Father Hugh,	8, 40, 199
Mann, Bela A.,	146, 148, 194
Manufacturing Enterprises of north part of the town,	19
Mansfield, name of, 16—Jesse M.,	194
Manderville, Capt. Thomas, makes an American flag,	27
Manufacturing Industry,	109
Maps of the Town of Hamden,	56
Mass, celebration of, at St. Mary's,	190
Massachusetts Colonial Army,	25
Masonic Lodge, Dayspring,	224
Mauberge Muskets,	206
Mather Family, note on the,	263
McAllan, Rev. Father,	198
McCartey, Thomas,	191
McLane, Edward P.,	157
Meal in 1825 from Mt. Carmel to New Haven,	83
Meeting House, first one at Mt. Carmel,	176
Memorial of inhabitants of the Parish of Mt. Carmel,	14
Memorial of Daniel Bradley and others,	175
Memorial to congress by Eli Whitney,	287
Menhaden fish oil, first made in Hamden,	86
Merrick & Towne turbine wheels,	14
Metamorphosed sandstone,	58, 64
Methodism, Hamden, by Rev. David MacMullen, 194—Methodist Church edifice built,	196
Mexican War, Hamden's quota of men, 19—Mexican War, American flag in the, 81—Mexican War, rifles from Whitneyville used,	140

Middlebrook, Grace, m. Christopher Todd,	276
Military and sporting arms made with steel barrels, 141—Militia, Second Regiment of, 14—Military Company, Seventeenth,	14, 200
Mill Rock, Whitneyville,	58, 59
Mill River, 57, 59, 60—utilization of power along, 111—water supply, 99—height of successive mill sites, 112—boundary line,	54
Mill for grinding gypsum,	168
Miller, Phineas, partner of Eli Whitney, 118, 285—Willis E., patent axle,	260
Millerite controversy in 1843,	196
Milling machines in making arms,	188, 189
Military history of Town,	200
Milk Wagons in procession, 6, 7—Milk for city supply,	86, 89
Mimmack, George Henry,	191
Mining in Hamden, history of, by J. H. Dickerman,	71
Mineral Deposits,	69
Mitchell, Donald G., extracts from his description of East Rock Park,	105
Mix, name of, 16—Family History, 263—Hon. Norris Bennett, services of, 264—Capt. Jonathan, inventor of carriage springs, 154—Capt. Jonathan, military and naval service of, 264—Mrs. Jonathan, sabbath school commenced by, 180—Miss Adeline N., daughter of Capt. Jonathan Mix, 287, 288, 277—Captain, house on Hamden Plain, 182—John, Jr., cotton printing and buttons, 111—Thomas, 201—main axletree springs,	156
Model of the Cotton Gin,	5, 18
Mohegan, Indian Nation,	49
Momauguin, Sachem of Quinnipiack,	49
Montowese, Sachem of Mattabeseck,	49
Moraine, ground, deposits on Mill Rock,	66
Morus Multicaulis,	90
Motto of Connecticut,	24, 25
Mount Carmel Society, 14, 175—Axle Works, 144—Bolt Co., 157—Brass Works, 148—Axle Works, 148—Screw Works, 158—Water Co.,	104
Mt. Tom Range, possible source of some of the erratic blocks of Hamden,	67
Mulberry Grove, Georgia,	285
Mulberry Trees,	90
Munson, name of, 16—Capt. John, grant of exclusive freighting, 98—Clifford, Superintendent Methodist Society Sunday School, 197—Charles, prospecting for copper in Hamden,	98
Music, vocal,	6
Muskets, manufacture of, in Hamden, 120—difficulty of making, 182—made in England, 120, 182—Whitney's memoir on making, 181—manufacture of,	294
Musket Locks, difficult to make,	295
Muster Roll of Seventeenth Company,	200

N.

Nancy, the brig chartered by the Continental Congress,	27
Nash, Mary,	237
National Water Wheel Co.'s wheel,	142
National Flag,	24
Navy, American, flag for, 26—naval expedition, first United States,	264
Neat Cattle, restrained from going at large,	217
Needle Factory, removed to Ohio,	169
New Britain, sleigh-bells, made at,	161
Newfoundland, attempt to found colony in,	246

New Haven Colony,	13
New Haven and Northampton Company, 96, 98—New Haven and Northampton track, removal of,	264
New Haven and Hamden Valley, origin of,	57
New Haven Web Company, 146, 147—New Haven Water Co., 99—New Haven Ice Company,	164
New York and New Haven Railroad,	99
New Lebanon Mission,	199
New Red sandstone formation,	68
Newton, Roger; Capt. Moses Hawkins and Mr. Enos Brooks, a committee, etc.,	58
Nichols, William H., of East Hampton,	161
North Haven, 18—brick clay, 168—brick, 162, 168—settlement at, 277—parish,	52, 175
North Carolina, contract for use of cotton gin, 116—legislature disposed to give consideration for the use of the cotton gin,	289
Norton, Gen. C. B., work upon American arms,	142
Northampton, trip to, by canal,	98
Northrop George, crop of peaches,	88
Nuts, cold pressed and swedged,	157

O.

O'Brien, Miss Eliza, 240—Rev. Father,	198
Officers of the Town at the First Election;	208
Old Bassett,	229
Old Fields, growth of forest trees on,	75
Oliver Wolcott, letter from respecting fire arms,	127, 298
Olmsted, Prof. Dennison, Memoir of Eli Whitney, extracts from,	122, 128
Opening Address, 13—Opening Prayer,	11
Orange trees, shears for pruning,	159
Orchestra,	6
Order of Exercises,	9
Osborn, Allen D., Supt. Mount Carmel Bolt Co.,	151
Ox-teams and wagons between New York and Boston,	19
Oysters, clams and fish, reservation of right to take,	15

P.

Paper Boxes made at Mt. Carmel,	157
Pardee, B. S., 152—Stephen D.,	152
Parish of Mt. Carmel,	51, 52, 54, 175, 176
Park, East Rock,	105, 108
Parsonage, Methodist Society, 196—Pastors of Methodist Society, list of,	197
Patent for carriage springs,	154, 155
Patent Law, observations on by Eli Whitney,	287, 288
Paul Jones, the first to use our national flag,	29
Payne, Deacon J. M., 8, 20—James M.,	192
Peaches and peach culture,	88
Peck, Hiel, house of,	15
Peckham, George, house of, 14—Peckham place,	51
Peddler's wagons,	145
Percival, J. G., native copper at Mt. Carmel,	74
Percussion lock rifles first made,	141
Perry, Samuel, ice business,	164

Phipps, Capt. Solomon, from Maine, 204, 276—Mary Elizabeth, . . .	276
Physician invited to settle in the town, . . .	216
Picturesque scenery of Hamden, . . .	60
Pierce, E. S., and James Ives, screw works, . . .	158
Pinckney, Hon. Charles Colesworth, at Charleston, . . .	289
Pine Rock, . . .	57, 59, 60
Pine Swamp, . . .	60
Pipe Clay in Valley of Willmot Brook, . . .	68
Plains and East Farms Highway, . . .	211
Plains of Hamden, road or way to in 1641, . . .	91
Plainville, canal opened to, . . .	97
Plan for the Celebration, committee appointed, . . .	1, 2
Planting Machines, . . .	164
Plaster Mill at Centerville, . . .	168
Polar Seas and the United States Flag, . . .	38
Poor of New Haven and Hamden, 86—Poor of the Town, 218, 220—sup- port of in 1795, . . .	218
Potatoes, . . .	84
Pot Holes along Mill River, . . .	67, 68
Population of Hamden diffused, 48, 44—of the Town, 221—distribution of, . . .	221
Potomac, Army of, Hamden soldiers in, . . .	206
Potter, Betsy, 268—Rev. Mr., at Grace Church, . . .	193
Pound-keeper's fees, . . .	216
Powell, C. W., . . .	196, 198
Procession, Day of Celebration, . . .	5, 7, 9
Proprietors' Records, . . .	207
Prospect Hill, . . .	24
Provincial Congress, quotation from the address of, . . .	25
Presidential Electors, vote for, 1824, . . .	216
Pruning Shears, John T. Henry, . . .	158
Public Armories of U. S., . . .	180
Public Schools, attendance and cost, . . .	172
Public Works of Hamden, . . .	91
Pumpkins, some, . . .	86
Purchase of the Land of New Haven and Adjoining Towns in 1688, . . .	49
Putnam General, Red Flag at Bunker Hill, 86—Rev. Austin, 6, 8, 11— Rev. Austin Installed as Pastor of the Hamden East Plain Society, 188—Rev. Austin, selections from historical discourse of, . . .	178

Q.

Queen's Arms, old muskets, . . .	200
Quinn, Major James, Instructor in Military Tactics, . . .	173
Quinnipiac, 18—valley, 57—river, Water, supply of, 99—Brick, 163— Indians, 49—Entrance to Park, 105—Company, . . .	86

R.

Railroads in Hamden, . . .	98, 99
Railroad Car trimmings, . . .	151
Read Geo. F. H., . . .	151
Rebellion, Hamden's Sons in the War of, . . .	19, 202
Records of Town, First Volume—short account of the, . . .	207
Rectory School, Everest's, . . .	173, 174, 194
Red Rock of the Hamden Hills, . . .	63

Reform Bill of 1832 and parliamentary suffrage,	37
Register, New Haven, extracts from the account of celebration,	6
Remington Gun,	143
Representatives, one allowed Hamden, 15—in Connecticut legislature from Hamden,	328
Reservoir of Water Company,	99
Revolution, Hamden's part in the,	19, 23
Revolutionary War, arms used in the,	135
Richardson, Lemuel, pastor of Methodist Society,	196
Ridge Hill, mines on,	70
Rifles, American, at the Exhibition 1851,	139
River Drift—Terrace Formation,	67
Rivington's Press, destruction of,	264
Roads and Bridges, maintenance of,	219
Roaring Brook,	200
Robertson, Hon. A. Heaton, 8, 44—Frederick, quoted by Mr. Willard, . .	274
Rock Breaker, invention of the, by Eli W. Blake,	238
Root, Josiah, Agent of Town to oppose Turnpike,	94
Ross, Elizabeth, of Philadelphia, makes an American Flag, 28—Col. George,	28
Rouse, Rev. John H., Grace Church,	193
Royal Charter of 1663,	50
Rubber Goods factory at Centerville, 144—Thread for Webbing,	147
Rubber, hard, by Goodyear,	253
Russell, Col. Edward,	15
Rye and other grain,	88

S.

Sabbath Day Houses formerly at Mt. Carmel,	176
Sabbath School, East Plain Society,	277
Sabbath School, established at Whitneyville,	189, 192
Sabin, Hezekiah, house of,	14
Sabine's Mill Pond,	112
Saint's Rest, Baxter's Admiration of Hampden,	17
Saltonstall Lake Iron Works,	109
Sandstone Hills of Hamden,	58
Sand and clay deposits,	68
Saw Mill and Flour Mill at Mt. Carmel,	169
Saybrook Circuit,	195
Scenery of Hamden,	60
Schools in Hamden, 170—laws, selections from, 171—Board, Report of, 171—For Boys, Everest's,	173
Screw Works, Mt. Carmel,	158
Scythes, manufacture of,	110
Sears, Capt. Joshua, 264—Anna, Sister of Capt. Joshua Sears,	264
Seaman, Henry, of New York,	152
Secession, opposition to,	212
Selectmen, first year of incorporation, 16—of Hamden, list of, 823— of New Haven,	7
Self Government,	37
Senate of Connecticut, members from Hamden,	331
Seventeenth Military Company,	14, 51, 200
Siemens, Martin, steel for gun barrels,	141
Sign Post,	15

Silk Society, Connecticut, 111—Silk Worms, 90—Silk Manufacture, R. S. Clark & Co., 159—Silk goods, value of made in U. S.,	159
Silver, native, in Mt. Carmel Copper,	70
Shares, D. W., patentee of horse-hoes and cultivators, 86, 164—H. P., brick industry,	162
Shears, Pruning, John T. Henry,	158
Sheep,	85
Sheep Shears,	158
Sheet brass sleigh-bells,	161
Shepherd's Brook, 57—Shepherd's Plain,	92
Sheridan, Rev. Father John,	198
Slaves in Georgia, picking seeds from cotton,	285
Sleeping Giant, elevation of, 58—poem by Merriman,	61
Sleigh-Bells and other small bells, 160—struck out of sheet brass,	161
Slope of Plain along Mill River,	59
Small-pox, inoculation for,	212
Smith, William T., Military History of, Hamden, 200—Wm. H., of New Britain, 150—John G., Major of Militia, 276—General S. R., 276—Sheldon, the founder of Birmingham, Ct., 150—J. E. & S. D., needles,	160
Societies,	224
Sodom Hill, Charles Goodyear's laboratory at,	253
Soil, varieties of,	60
Soldiers killed at defence of New Haven, 201—In war of 1812, 201, 202—in last war, 202, 205—monument on East Rock,	58
Sounding Board at Mt. Carmel Meeting House,	176
South Carolina, blue flag, 25—flag presented to, 26—purchase of right to use cotton gin,	115
Southington, St. Thomas' Church,	198
Sperry, Hon. N. D., Address on the Flag of Our Union, 23—Ellhu, black-smith shop,	109
Sporting Rifles, at Whitney Armory,	142
Springfield, Government Armory, 188—Water Works and Armory in 1792,	93, 296
Springs for carriages, invention of,	154
Squire Bassett,	236
St. Etienne muskets,	296
St. Mary's Roman Catholic Church,	198
Stamford, Robert Bassett at,	281
Stamping Leather,	212
Starr, Orlando,	196, 197
Stars and Stripes, American flag,	26, 27
State Taxes due from the poor,	211
Statistics of attendance at school,	171
Steamboats, Fulton's,	804
Steps, the, at Mt. Carmel,	57, 92
Steel Rifle Barrels, 140—steel bolts cheaper than iron, 157—steel springs for carriages,	155
Stiles, President Ezra, silk industry, 111—his orthography of Hamden,	17
Stone from the rocks,	15
Stove bolts, tire bolts, etc.,	157
St. John's Church, North Haven,	194
Stratford Circuit,	195
Streets laid out in town near city line,	222
Sunday schools of the town, 6—of Methodist society,	197
Surveyors of highways for 1786,	208
Suspenders made by Web Company,	147

T.

Talcott, Col., chief of ordnance,	140
Tallman, David, formerly mined on Ridge Hill, 71—Tallman's Mine,	93
Tarrant, Rev. Henry,	194
Taxes, Highways, etc., 1786,	209
Taxation and land records, E. B. Cooper on,	313
Taylor, Rev. Dr. Nathaniel,	186
Teachers in the town schools,	170
Terrace plain along Mill River,	59
Thoroughbrace springs for carriages,	155
Timlow, Rev. Heman R.,	194
Tire Bolts and other bolts,	157
Title, boundaries and topography of Hamden,	49
Tobacco culture,	87
Todd, name of, 16—Asa, 228, 270—Christopher, 276—Ithamar, 52, 53, 176 —Elizabeth, m. Capt. Solomon Phipps, 276—Lyman, I., 150—Miss Angelina, 244—Josiah, of North Haven, found a mass of copper, 70 —Mary, m. Nathaniel Tuttle, 278—Family of, Hamden,	276
Todd's grist mill,	100, 111
Tomb of Eli Whitney, inscription on,	281
Topography of the Town of Hamden,	57
Topographical Features, duality of,	59
Town Clerk, Simeon Bristol, 16—town organization in Connecticut, 21— town government, 21—town pride a laudable feeling, 23, 23, 43— town accounts, 215—town farm, from Mr. Enos Brooks, 218— town line, vote to straighten, 1797, 214—town poor, 215—town meetings, time and place of, 1786, 209—town house for Hamden, 1793, 213, 215—towns adjoining Hamden,	56
Town, Ithiel, truss bridge at Whitneyville,	103
Townshend, George H., James M. and H. A.,	164
Tram and floss silk,	159
Transportation of brick by rail,	163
Transported blocks of trap rock,	64, 67
Treat, John L., President New Haven Ice Company,	104
Trap Dykes in sandstone,	58, 63
Triassic formation,	63
Triumphal Arch,	5
Trumbull, Governor Jonathan, letter from,	301
Truss Bridge at Whitneyville, 103—removal,	103
Turbine water wheels,	141
Turbine water wheels of Web Company,	147
Turnpike of Hartford and Cheshire, 215—Cheshire,	278
Tuttle, name of, 16—Amasa, 195—Ambrose, 278—Hon. Henry, 279—ad- dress by, 41—Leveret, Capt. of Hamden Militia, 278, 201—Deacon Joshua, 228—George F., copies of inscriptions in Hamden Plain (west) cemetery, 280—George F., copies of inscription by, 280—Judge Horace, 278—Mary, 246—William and Elizabeth, 277—Miss Mary, dau. of Dea. Joshua, 279—Sybil, wife of Amasa, 195—George Fred- erick, author of the Tuttle Family volume, 277—Mrs. Sophronia, 194 —family of Hamden, 277—farm used for town poor, 219—bridge,	277
Twining, Alexander C., survey on canal railroad, 97—for Water Company,	99

U.

Uniformity System, 296—in manufacturing, 129, 130, 136, 139—originated in Hamden,	18
Union Flag hoisted in Jan., 1776,	26

V.

Van Horn, Cornelius,	150
Van Nest, A. R.,	150
Vestrymen of Grace Church,	194
Vibration produced by overflow of dams,	101
Village of Whitneyville,	148
Violin made by Eli Whitney, when a boy,	282
Viticulture,	87
Vocal Music,	6

W.

Wadsworth, Captain Declus,	295
Wagon for freighting from New York to Boston, 44—wagons with cases of goods in the procession,	5
Walker, Rev. W. B.,	194
Wallingford bounds,	55
Wallingford, Church of Holy Trinity,	198, 199
Walter, Rev. Mr., at Grace Church,	198
Walton, Rev. J. E.,	194
Ward, General Andrew,	15
Wardens of Grace Church,	194
War of Revolution, Capt. John Gilbert, marching to New Haven, 28— 1812, roll of drafted men, 201—of 1812, 80—of the rebellion,	202
Warner, Abner, Superintendent Methodist Society Sunday School, 197— Hon. Elias, 280—Hon. Hubert E., list of representatives, 328—Fam- ily notes, 280—Norman, of New Britain,	145
Warnertown,	197
Washington, General George,	28
Waterbury, manufacture of bells,	161
Water Company, at Mt. Carmel, 104—Water Company, New Haven,	90
Waterfalls at Whitneyville, 124—Water Power from the Farmington Canal, 145—Water Power along Mill River, 111—Water Wheels and Power at Whitney Armory in 1842,	139
Water Works at Whitneyville,	294
Webb, James H., 8—remarks by, 43—J. J., tobacco culture, etc., 87— Deacon Darius,	190
Web Company, at Centerville,	145
Webster, Daniel, on United States flag,	84
Weld, Mason C., on the horse hoe,	165
Westfield Circuit,	195
West Indies, old copper from,	151
West River,	58
West Rock range,	57, 58
West Woods,	92
West Woods, a locality favorable for peaches,	88
Wheels and Spokes, manufactured by Beers & Fenn,	168
Wheat, rye and corn,	88
Whitcombe, Rev. Ephraim,	194
Whitehead's lot,	92
White Haven Society,	282
Whiting, Capt. Jared, 202—family,	312
Whitlock muskets,	189

Whitney Armory,	120, 139, 142, 143
Whitney Arms Company,	5, 139
Whitney avenue,	93
Whitney dam of New Haven Water Co.,	100
Whitney, Eli, 8, 18—inventor of the cotton gin, 18, 112—proposes to establish an Armory for the fabrication of fire arms, 120—memoir of, 281—inscription on tombstone,	281
Whitney, Eli (2d), and the New Haven Water Works, 99—takes charge of and improves the Armory, 309—organizes the Whitney Arms Company, 143—suggests use of East Rock for a public park,	310
Whitney, Eli Jr., 143—Alderman, New Haven, and Park Commissioner,	311
Whitney Lake, the storage reservoir of the New Haven Waterworks,	57, 99
Whitney system in manufacturing,	128, 129, 130
Whitney system of breech-loading small arms,	143
Whitneyville, 93, 124—Location of church near, 188—population of,	222
Wilcox Wm.,	153
Wilkes, Commodore and American flag,	83
Willis Churchill Mfg. Co., 144—Churchill,	143
Wilmot Brook,	57, 60
Winston, Elizabeth,	223
Wintergreen Lake, 58—water works,	104
Winthrop, John, iron works, 1655,	109
Witchcraft, Robert Bassett's wife tried for,	232
Witte, William, paper boxes,	157, 158
Wolcott falls,	104
Wolcott, Oliver, Secretary of Treasury of U. S., letter to, regarding fire arms,	120, 123
Wood Ashes, use of as a fertilizer,	89
Wood Axles for wagons and carriages,	145
Wood Screws, Mt. Carmel,	153
Wood and Timber, consumption of,	76, 77
Woodbridge, 18—boundary line,	213
Wooding Charles,	196
Woodruff W. W.,	153
Woodruff, Miller & Co., carriage hardware,	143, 153, 154
Wooster, Fort, earthworks at,	202
Workhouse for the Poor of Town, 217—vote on, 1795,	213
Worcester County, Massachusetts,	232
Wyles, James, grist mill at Mt. Carmel,	83
Wylls, George, Secretary,	15

Y.

Yorktown, and surrender of Cornwallis,	29
--	----

3466
19

**This book is a preservation photocopy.
It was produced on Hammermill Laser Print natural white,
a 60 # book weight acid-free archival paper
which meets the requirements of
ANSI/NISO Z39.48-1992 (permanence of paper)**

Preservation photocopying and binding

by

Acme Bookbinding

Charlestown, Massachusetts



1996



3 2044 024 601 650

